

The Commonwealth of Massachusetts

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CATALOGUE
1967 — 1968

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1967 — 1968



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CALENDAR 1967-1968

First (Fall) Trimester

September 19-25, 1967	Registration Period
September 26	.	.	.	.	Classes Begin
October 12	.	.	.	.	Columbus Day, Holiday
November 17	.	.	.	.	Mid-Term
November 23	.	.	.	.	Thanksgiving
December 23-January 1, 1968	.	.			Christmas Recess
January 12-19	.	.	.	.	Examination Period

Second (Spring) Trimester

January 24-29	.	.	.	.	Registration Period
January 30	.	.	.	.	Classes Begin
February 22	.	.	.	.	Washington's Birthday, Holiday
March 18	.	.	.	.	Evacuation Day, Holiday
March 20	.	.	.	.	Mid-Term
April 12-21	.	.	.	.	Spring Recess
May 20-27	Examination Period
June 8	Commencement

Third (Summer) Trimester begins June 4.

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 B.S., College of the City of New York
 A.M., Columbia University
 Ph.D., Indiana University
- PETER PAPPAS *Professor, Chemistry*
 A.B., Boston University
 Ph.D., Boston University
- GERARD A. PAQUETTE *Associate Professor, Mathematics*
 B.A., La Mennais College, Alfred, Maine
 M.Ed., State College at Bridgewater
 M.A., Boston College
- HELEN F. PARKER *Instructor, Physical Education*
 A.B., DePauw University
 M.S., Wellesley College
- PAULINE PARSONS *Instructor, Biology*
 B.S., Pennsylvania State
 M.A., Wellesley College
- WILLIAM E. PERRAULT *Professor, Mathematics*
 B.S., Northeastern University
 M.S., University of Michigan
 Ph.D., St. Louis University
Department Chairman
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 A.M., University of Oregon
- HUBERT J. POWDERLY *Associate Professor, Psychology*
 A.B., Holy Cross College
 A.M., Columbia University
- THOMAS O. POWER *Associate Professor, History*
 A.B., Boston College
 A.M., Boston College
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 Ed.M., Harvard University
 A.M., Syracuse University
Associate Dean of Women
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 A.M., Boston University
- RICHARD J. RAFFERTY *Assistant Professor, Physics*
 B.S., Boston College
 M.S., Boston College
- RICHARD H. RUDOLPH *Instructor, History*
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 A.M., University of Connecticut
- DANIEL RUDSTEN *Assistant Professor, History*
 B.L.I., Emerson College
 M.P.A., Harvard University
- PETER A. SAITTA *Instructor, Physical Education*
 B.S., Boston University
 A.M., Boston University

- WESTON P. SANFORD *Instructor, Physical Science*
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 M.S., University of New Hampshire
- DOROTHY T. SCANLON *Professor, History*
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 A.M., University of Pennsylvania
 A.M., Boston College
 Ph.D., Boston University
- BRUCE A. SCOTT *Instructor, Philosophy*
 A.B., University of Michigan
 A.M., University of Michigan
- MYRON R. SEGELMAN *Associate Professor, Biology*
 B.S., Massachusetts College of Pharmacy
 M.S., Massachusetts College of Pharmacy
- DORAISWAMY SHANMUGASUNDARAM *Assistant Professor, Biology*
 B.S., University of Madras, India
 M.A., University of Rhode Island
- HAROLD E. SHAPIRO *Associate Professor, Psychology*
 B.S., Boston University
 Ed.M., Boston University
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 M.S., University of Wisconsin
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 Ed.M., Teachers College of the City of Boston
 M.A., Boston College
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 M.S., University of Wisconsin
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 M.A., Boston University
 Ph.D., Boston University
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 Ed.M., Boston College
 M.A., Brandeis University
- ROBERT W. SPAYNE *Associate Professor, Geography*
 B.S., Worcester Teachers College
 A.M., Oberlin College
- WILLIAM J. SQUIRES *Assistant Professor, Physical Education*
 B.S., University of Notre Dame
 Ed.M., Boston University
- JOHN STAULO *Associate Professor, Spanish*
 B.S., Boston College
 M.A.T., Boston College
 A.M., Middlebury College
- CHARLES R. STEPHENS *Instructor, English*
 A.B., David Lipscomb College
 A.M., George Peabody College
- MARVIN E. STICK *Instructor, Mathematics*
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 A.M., Boston University

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 A.B., St. Lawrence University
 A.M., Boston University
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 B.S., College of the City of New York
 A.M., University of Michigan
 Ph.D., University of Michigan
 M.D., Western Reserve University
- DAVID L. SUDHALTER *Associate Professor, Political Science*
 B.A., University of Massachusetts
 A.M., Boston University
 A.M., Brandeis University
 Ph.D., Boston University
- PAUL G. SULLIVAN *Associate Professor, History*
 A.B., Harvard College
 Ed.M., Boston Teachers College
- ROBERT D. SULLIVAN *Instructor, Elementary Education*
 B.S., State College at Boston
 M.Ed., State College at Boston
- MAURICE TEMPLE *Associate Professor, Science*
 B.S., Northeastern University
 Ed.M., State College at Boston
 M.Sc., Simmons College
- ARTHUR F. THOMPSON *Instructor, Physical Science*
 B.S., Providence College
 M.S., University of Connecticut
- RICHARD C. THORNE *Assistant Professor, History*
 A.B., Colby College
 A.M., Boston University
- GEORGE E. THORNTON *Instructor, English*
 A.B., College Emporia
 M.S., Emporia State Teachers College
- MARIE T. TIERNEY *Instructor, Biology*
 B.A., Emmanuel College
 M.A., Boston University
- WILLIAM K. TINKHAM *Assistant Professor, History*
 A.B., Boston University
 A.M., Harvard University
 Certificate: Oxford University
- JAMES M. TOMPKINS *Instructor, Physics*
 B.S., Boston College
- VINCENT J. TRINGALE *Associate Professor, Art*
 B.S.Ed., Massachusetts College of Art
 Ed.M., Boston University
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 M.S., Northeastern University
- FRANCIS J. VEALE *Associate Professor, Biology*
 B.S., Fordham University
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B.S., Northeastern University	
A.M., University of Massachusetts	
MARY P. WALSH	<i>Instructor, Foreign Languages</i>
A.B., Emmanuel College	
A.M., Middlebury College	
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A.B., Boston University	
A.M., Boston University	
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A.B., Brandeis University	
A.M., New York University	
Ph.D., New York University	
JOHN WESTON	<i>Associate Professor, History</i>
A.B., William and Mary	
A.M., Boston University	
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A.B., Radcliffe College	
A.M., Syracuse University	
ANNE K. WINTERS	<i>Instructor, English</i>
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A.M., Boston University	
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Ph.D., Harvard University	
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M.Ed., Tufts University	
HENRY N. YOUNG	<i>Assistant Professor, Psychology</i>
A.B., Boston University	
Ed.M., Boston University	

LIBRARY STAFF

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M.Ed., State College at Boston	
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B.Mus., University of Southern California	
M.A., George Peabody College	
ANNE L. LINSKEY, R.N.	<i>Resident Nurse</i>

GENERAL INFORMATION

In September, 1967, the institution now known as the State College at Boston begins its one hundred sixteenth year of education for service. Under the direction of the Trustees of State Colleges, the college operates as a commuter institution, offering programs in the liberal arts and in teacher education. Conveniently located in the educational and cultural center of the city, the State College at Boston serves the educational needs of a constantly growing number of students from metropolitan Boston.

HISTORY

The college began operation in 1852 as the Boston Normal School. It functioned as the teacher training agency for the City of Boston Public Schools for a full century. The Normal School era lasted until 1924, when the school became the Teachers College of the City of Boston. As a teachers college, it broadened its offerings, provided a five-year program leading to the Master of Education degree, and offered degrees through the extension division.

In 1952, the Board of Education of the Commonwealth of Massachusetts assumed control, and the college became the State Teachers College at Boston. As a state institution, the college began a period of steady growth and expansion of offerings. In 1960, the title of the college was changed to State College at Boston, and power to grant degrees in liberal arts was given. Expansion in curriculum has paralleled expansion in undergraduate enrollment, which has grown from approximately 600 in 1952 to nearly 4000 in 1967.

PURPOSE

The motto of the College is "Education for Service." In both its liberal arts and teacher training programs the college aims at the fullest possible development of the individual through general education, professional training and specialization, and participation in college activities. The graduate should be prepared for full and effective participation in the life of the community, state, and nation. To fulfill this purpose, the college aims to provide educational opportunities for as many qualified students as its facilities and resources will allow.

ACCREDITATION AND AFFILIATION

The State College at Boston is accredited by the New England Association of Colleges and Secondary Schools.

The college holds institutional membership in the American Association of Colleges for Teacher Education, the Eastern States Association of Professional Schools for Education, the New England Teacher Preparation Association, the Association of State Colleges and Universities, and the American Association of Colleges.

THE TRIMESTER CALENDAR

In June, 1965, State College at Boston began operation on the trimester calendar. The academic year is composed of three 15-week terms instead of the customary two. The year is divided as follows:

1st trimester — mid September to mid-January

2nd trimester — late January to late May

3rd trimester — early June to mid-September

Student participation in the trimester plan is voluntary. However, a student must enroll for two of the three trimesters during any year. Those who choose to attend all three terms achieve a significant acceleration; entering freshmen may complete college in two and two-thirds years.

The curriculum offerings in all trimesters are essentially the same. All required courses in general education and the professional preparation sequences are offered in each trimester. Elective offerings in academic areas may vary, but all essential offerings are available each year.

The trimester system allows students an unusual degree of flexibility in planning their academic careers. Students may accelerate, work during periods when most colleges are in session, plan for graduation in September or January as well as June. The faculty and administration feel that the adoption of the trimester calendar has greatly broadened the educational opportunities at the college.

CAMPUS

Location and Environment

The State College at Boston is located on Huntington Avenue between Longwood Avenue and Evans Way in Boston's educational and cultural center. In the immediate vicinity are Simmons and Emmanuel Colleges, the Harvard Medical and Dental Schools, Wentworth Institute, Northeastern University, and the Massachusetts College of Art. The Boston Museum of Fine Arts and the Isabella Stewart Gardner Museum offer unusual cultural advantages both in their collections and through their fine concerts and lectures.

BUILDINGS

Administration Building

The Administration Building contains the office of the President and those of other administrative departments. The college library is also located here, as are the facilities of the Department of Foreign Languages, which include a modern language laboratory.

Collins Building

Here are the offices and classrooms of the Department of Mathematics and Art. In the basement is a large student lounge area.

North Building

This building contains North Hall, a large auditorium, and houses the Department of English, History, Political Science, Music and Psychology.

William H. J. Kennedy Building

The Kennedy Building, completed in 1964, offers modern facilities for the teaching of a wide range of course offerings in Biology, Chemistry, Geography and Earth Science, and Physics. The lower floors contain the cafeteria, lounges for student and faculty, offices for student organizations, and the offices of the Dean of Students.

Physical Education Buildings

A newly renovated gymnasium building contains physical education and locker facilities for both men and women. The new Physical Education building, opened in September, 1967, contains offices and classrooms, a large gymnasium seating over 1000, as well as a variety of other facilities, including handball courts, dance studios, apparatus rooms, and a rifle range.

ADMISSIONS

The office of the Director of Admissions is located in the Administration Building. Inquiries concerning application for admission to undergraduate programs should be made to the Director of Admissions. Admissions for Graduate programs are handled by the office of the Dean of Graduate Studies. The following regulations apply only to undergraduate programs:

I. General Requirements

- A. Graduation from high school with 16 units of work or equivalent preparation.
- B. Successful completion of the Scholastic Aptitude Test and three Scholastic Achievement Tests administered by the College Entrance Examination Board. One Achievement Test *must* be English. This college does not accept the writing sample as one of the three tests.
- C. Good health as evidenced by a physical examination report.
- D. Interview by college faculty members.

II. Early Acceptance

An applicant may be accepted by a college after the first quarter or marking period of the senior year if he has:

- A. Completed successfully the Scholastic Aptitude Test and achievement tests.
- B. A 3.0 (B) average in the highest 16 units of high school work. Eight units must be as follows: English (including grade 12), 4 units; College Preparatory Mathematics, 2 units; American History and Government, 1 unit; Biology, Physics or Chemistry, 1 unit. Applicants for Bachelor of Arts Program must also present 2 units in a foreign language.

III. Regular Acceptance

A student not eligible for early acceptance may qualify for regular acceptance if he meets the general requirements and has the following high school units: English (including grade 12), 4 units; Mathematics, 2 units; American History, 1 unit; Science, 1 unit. Applicants for the Bachelor of Arts program must also present 2 units in a foreign language.

IV. Admission to Advanced Standing

Applicants for admission to advanced standing, seeking transfer of credits from other colleges and universities, must meet the general admissions requirements and must submit official transcripts and letters of recommendation from the deans of all post-secondary institutions attended.

TUITION AND FEES

Registration Fee: Each entering student must pay a registration fee of \$20.00 following notification of acceptance. This fee is non-refundable, but is deducted from the first tuition payment of students who attend. A \$2.50 registration fee is required of each student attending classes in the Program of Continuing Studies.

Tuition

I. For Residents of Massachusetts:

- a. Full-time attendance — \$100.00 per trimester payable at the beginning of the trimester.
- b. Part-time day students — \$7.00 per semester hour.
- c. Program of Continuing Studies — \$18.00 per semester hour.
- d. Auditor in Program of Continuing Studies — \$11.00 per semester hour.

II. For Non-Residents of Massachusetts:

- a. Full-time attendance — \$300.00 per trimester payable at the beginning of the trimester.
- b. Part-time day students — \$21.00 per semester hour.
- c. Program of Continuing Studies — \$25.00 per semester hour.
- d. Auditor in Program of Continuing Studies — \$11.00 per semester hour.

Student Activities Fee: \$15.00 per trimester. Every undergraduate student (except in the Program of Continuing Studies) is required to pay this fee. The Student Activities Fee is not refundable. Every student thus becomes a member of the Student Government Association with the privilege of participation in all its activities and programs.

Transcript Fee: A certified copy of a student's record will be issued when requested. The fee is one dollar per copy.

GENERAL REGULATIONS

Registration

1. *Registration dates.* Students should register on the registration dates announced in the College calendar. Permission of the Registrar should be secured for the registration on dates other than those assigned.
2. *Curriculum Advisors.* Students working toward degrees in Liberal Arts or in secondary education must consult the chairman of their major department (or his representative) before electing courses.
3. *Course load.* Normal course load varies between fifteen and eighteen semester hours. Individual variation from this normal load may be accomplished only with the permission of the dean of the class.
4. *Transfer of Credits.* Students regularly enrolled who wish to secure credit for courses taken at other institutions or in the Summer Session must secure permission from their deans prior to enrolling for these courses.
5. *Withdrawal from courses.* Students may withdraw from courses only during the first four weeks of the term and with the permission of the dean of the class. Otherwise a grade of 0 is recorded.
6. *Withdrawal from the college.*

Students who find it necessary to withdraw from the College should do so only after consultation with their Deans.

Until a student withdraws officially, he is registered in all courses and will receive grades appropriate to his performance. Students who cease attending classes without officially withdrawing will receive grade of 0.

Attendance

Regular attendance at all classes is essential if a student is to receive full benefit from his studies. Attendance is taken in each class by the instructor. Students must assume responsibility for informing their deans of the reasons for absences due to illness, etc.

Absence from a class in which a scheduled quiz or examination is given should be reported at once to the dean of the class. Permission to make up the quiz or examination may be granted only by the dean.

Academic Standing

The following quality-point ratio system will be in force at State College at Boston:

A = 4, B = 3, C = 2, D = 1, F = 0.

A student must maintain a quality point ratio of 1.5 at the end of the Freshman year, 1.75 at the end of the sophomore year, 2.0 at the end of the junior year and senior year, and the student must have a final ratio of 2.0 in order to graduate. A student must withdraw from the college at the end of the first semester of the freshman year if his ratio is below 1.0.

A student who is dropped because of failing grades due to illness, home difficulties, or similar circumstances may be given permission to repeat the year at the discretion of the president.

The determination of quality points is made at the end of each college year, and, excepting when the year is repeated, the number of points is not affected by grades in courses subsequently taken and passed.

"F" grades can never be removed, but the subjects in which they have been received must be repeated and passed, or, in the case of electives, other approved courses must be taken and passed either in approved summer sessions, or when possible, during the regular college year. Continuing subjects in which "F" grades have been received must be successfully repeated before the student may take advanced work.

STUDENT SERVICES

Guidance

Orientation: An orientation program under the supervision of the Deans of Students is provided for new students at the beginning of the fall term. It includes testing, health examinations, introduction of student and administration officers, and exploration of college services, curricula, and activities.

Counseling: The offices of the Dean of Men and Dean of Women offer educational and personal counseling services.

Health

The health office is located in the Administration Building. A registered nurse is on duty at all times during the school day.

Financial Aid

Scholarships: The college itself has not scholarship funds to offer.

Loans: Loans may be obtained under the National Defense Education Act Student Loan Fund program. Application forms for loans under this program may be obtained by writing to the Institutional Representative, National Defense Education Act (NDEA) at this college.

Part-time work: Under the college work-study program needy students may work on campus for pay. The maximum number of hours per week permissible is fifteen. For further information contact the Director of Administrative Services.

Library

The college library is located in a wing of the Administration Building. Materials for research and course assignments are located for easy accessibility.

The library collection has doubled in the last five years and several thousand volumes are added yearly. The periodical collection provides excellent coverage of scholarly journals and professional periodicals. A large curriculum library, useful for students in the teacher preparation programs, is maintained. Library facilities include quiet areas for study and research, specially equipped rooms for listening to phonograph and tape recordings, and microfilm readers.

ORGANIZATIONS AND ACTIVITIES

Student Government Association

Every student is a member of the Student Government Association. Through its officers and representatives, the Association oversees student activities and represents the student body in matters of student interest. The Association sponsors several social events for the whole student body, including the All-College Banquet, several dances, a musical, and a drama contest.

Athletics

The Athletic program at the college is based on the premise that athletics in the total educational process is of tremendous value to both the individual and to his college.

At present Boston State is a member of the National Collegiate Athletic Association, the Eastern Collegiate Athletic Conference, and the New England State College Athletic Conference. Teams are sponsored in the following sports: Cross Country, Hockey, Basketball, Wrestling, Track and Baseball. An active intramural program is operated throughout the school year. Intramural activities include: tag football, basketball, badminton, volleyball, boxing, golf and tennis. The coaching staff is composed of men nationally recognized as experts in their fields.

Women's Recreation Association

Each woman student is a member of WRA. An active member is one who receives credit for participation in activities during her career. The Association program offers opportunities both for the development of athletic skills and for social activity and exercise of leadership.

The WRA program includes golf, modern and folk dancing, tennis, archery, basketball, fencing, and badminton. Activities include cook-outs, splash parties, and playdays.

Volunteer Service

The Volunteer Service Bureau operates on the principle of service for others, aiding local agencies through recreation leadership, group work, guidance, and social services. Members offer unpaid service to agencies throughout Metropolitan Boston.

Publications

Chalkdust, the college newspaper, is published bi-weekly throughout the school year. Staff work is open to all students interested in gaining competence in writing and experience in newspaper work.

Spectrum, the college literary magazine, is published irregularly during the year. It offers opportunity for those interested in creative writing and photography. Any member of the student body is eligible to contribute.

Lampas, the yearbook, is edited each year by members of the senior class.

Dramatics

Each year, several opportunities for participation in dramatics occur, in the presentation of the Drama Club, in the college musical, and in a one-act play contest. Participation is open to any interested student.

Lecture Society

Each year the Lecture Society sponsors a series of lectures by outstanding speakers and by figures in public life.

Clubs

A number of clubs and societies are maintained by the students to provide opportunities for activities of interest. These include religious clubs, Newman, Hillel, Protestant Student Association, and Orthodox Club. Other clubs relate to subject area such as French, Spanish, Psychology, Mathematics, Literature, and World Affairs.

Honor Societies

Chapters of three national honor societies are presently operating on the campus: the Mu Iota Chapter of Phi Alpha Theta, the international honor society in history; Iota Rho Chapter of Gamma Theta Upsilon, the professional Geography fraternity; and a chapter of Psi Chi, the national honor society in Psychology.

TRANSCRIPTS

Upon graduation one certified copy of a student's record will be issued without charge. Additional copies may be obtained upon request at the rate of one dollar per copy. During final examination and registration periods a time delay of about two weeks must be anticipated in the honoring of transcript requests.

UNDERGRADUATE CURRICULA

The State College at Boston offers undergraduate programs leading to the degrees of Bachelor of Science in Education, Bachelor of Arts, and Bachelor of Science.

The B.S.Ed. degree is offered in three fields, kindergarten-primary, elementary, and secondary education. Candidates for the degree must fulfill the requirements in general education and complete the required program of professional preparation including practice teaching. For the degree in secondary education, a student must also complete, beyond the requirements of general education, at least twenty-four semester hours in a major academic field.

There are two curricula leading to the A.B. degree, one including teacher preparation, the other without this professional training. All candidates for this degree must complete beyond general education at least twenty-four semester hours in a major academic field. Those who elect the teacher-preparation program must complete at least twenty-four semester hours in secondary education, including practice teaching. Candidates for the non-teaching degree must complete, in addition to their major, at least eighteen semester hours in a minor academic field. All candidates for the A.B. degree must meet the degree requirements in foreign language and mathematics.

The foreign language requirement may be met by the successful completion of a course at the advanced level (131-132) or above, or by the successful completion of two years work in one language at college level. This requirement may also be met by a superior performance on the achievement test of the CEEB.

Each candidate for the degree of Bachelor of Science must complete beyond the required program of general education at least twenty-four semester hours in a major academic field and at least eighteen semester hours in a minor academic field. Each candidate for the B.S. degree must also complete the degree requirements in mathematics.

Major and Minor Fields

Candidates in secondary education or a non-teaching program may choose a major from the following fields:

Biology	French	Mathematics
Chemistry	Geography	Physics
Earth Science	History	Spanish
English		

The following major fields are open only to those in the non-teacher preparation programs:

Economics	Latin American Studies
Political Science	Psychology

A minor may be developed in any of the major fields in any of the following:

Art	German	Music
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Honors Program

Students who have achieved high grades in their Freshman and Sophomore years may apply for admission into the honors program at the beginning of their Junior year. If admitted to this program, the candidate for honors must pursue a program of independent study and research under the supervision of an academic department. This will ordinarily lead to an undergraduate thesis or its equivalent. Students who complete this program satisfactorily will be awarded their bachelor's degree with honors.

Latin-American Studies

The Latin-American Studies program is an interdepartmental major in the program leading to an A.B. degree. Candidates will choose courses in the Departments of Foreign Languages, Geography and History.

Latin-American Studies majors must elect Spanish at a level appropriate to their preparation during their Freshman year. They must complete the following courses: Sp311-312 — Spanish Composition and Conversation, Sp342 — Spanish-American Literature, Sp423 — Spanish-American Civilization, G301 — Principles of Physical Geography, G304 — Regional Geography of Latin America, H205 — History of Latin America to 1825, and H206 — History of Latin America since 1825. Courses in Economics, Geography and Political Science, Sociology and Anthropology, and Spanish may be chosen as electives.

For detailed information of course sequences, consult the Latin-American Studies Chairman, Dr. Richard W. Newman.



EVENING UNDERGRADUATE COLLEGE

The Evening Undergraduate College offers to students an opportunity to pursue a program of study during the evening hours. Those students wishing to pursue a degree program in the Evening College may work towards a Bachelor of Science degree with a major in either English or History. These degrees will be non-teaching degrees.

Students may take a minimum of six semester hours of credit and a maximum of eighteen semester hours of credit each semester. The curriculum is identical to that of the Day College.

Faculty

The Faculty of the Evening College is composed of the faculty of the Day College and selected visiting lecturers.

Class Sessions

From September to June classes are held Monday through Thursday evenings from 4:30 P.M. to 9:15 P.M.

Admission Procedures

1. Application filed with Boston State College.
2. Transcript of high school record.
3. The following tests given by the College Entrance Examination Board:
 - a. Scholastic Aptitude Test (both verbal and mathematical)
 - b. English Achievement Test (exclusive of writing sample)
 - c. Two other Achievement Tests of each candidate's own choosing.
4. A personal interview with the Admissions Officers of the State College at Boston.

Tuition

Tuition for the Evening College is the same as for the Day College. However, for those students not enrolled in a full time program, adjustments will be made in the tuition.

Student Activity Fee

Each student is required to pay a Student Activities Fee of \$15.00 per semester. The development of a mature spirit of self-government is encouraged by the college.

Evening College students elect two representatives to the Student Government Association to represent them and to present their views to this body. Evening College students are encouraged to participate fully in Student Government Activities.

Veterans Notice

Veterans enrolling in the Evening College under the new Educational Assistance must present their certificate of eligibility to the Dean at the time of registration or as soon as possible thereafter. Veterans are expected to follow the same procedure for payment of tuition as all other students.

Further Information

For further information concerning the Evening Undergraduate College, contact Gerard M. O'Meara, Dean of the Evening College.

OUTLINE OF CURRICULA

KINDERGARTEN-PRIMARY CURRICULUM

B.S. in Education

FIRST YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
E101 English Composition	3	E102 English Composition	3
E103 Effective Speech	2	H1102 Personal Health	2
H101 Western Civilization	3	H102 Western Civilization	3
PE101 Physical Education	0	PE102 Physical Education	0
PY101 General Psychology	3	PY102 Ed. Psychology	3
PS101 Physical Sciences	3	PS102 Physical Sciences	3
Elective	3	Elective	3
	<hr/> 17		<hr/> 17

SECOND YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
A201 Art Appreciation	3	E202 Maj. Br. Writers II	3
PY201 Child Development	2	H202 American History	3
E201 Maj. Br. Writers I	3	Ms206 Music Appreciation	3
H201 Am. History	3	Bi202 Biology	3
PE201 Aquatics	0	Elective	3
Bi201 Biology	3		<hr/>
Elective	3		15
	<hr/> 17		

THIRD YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
A315 Art for Kind.-Prim.	3	A316 Arts & Crafts	1
Ed311 Communicative Arts	2	Ed312 Communicative Arts	2
Ed313 Kind.-Prim. Principles	2	Ed314 Kind.-Prim. Principles	2
G301 Physical Geography	3	E321 Child. Lit.	2
M305 Basic Modern Math.	3	M316 Prim. Sch. Math.	2
PE301 Physical Ed.	1	G302 Human Geography	3
Elective	3	FA302 First Aid	1
	<hr/> 17	Elective	3
			<hr/> 16

FOURTH YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PH401 General Philosophy	3	Ed400 Student Teaching	14
Ms411 Kind.-Prim. Music	3	and Seminar	14
E421 Maj. Am. Writers	3		<hr/>
Ed422 Ed. Measurement	2		14
Bi421 Field Biology	3		
Elective	3		
	<hr/> 17		

ELEMENTARY CURRICULUM

B.S. in Education

FIRST YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
E101 English Composition	3	E102 English Composition	3
E103 Effective Speech	2	H1102 Personal Health	2
H101 Western Civilization	3	H102 Western Civilization	3
PE101 Physical Education	0	PE102 Physical Education	0
PY101 General Psychology	3	PY102 Ed. Psychology	3
PS101 Physical Sciences	3	PS102 Physical Sciences	3
Elective	3	Elective	3
	<hr/> 17		<hr/> 17

SECOND YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PY201 Child Development	2	A201 Art Appreciation	3
E201 Maj. Br. Writers I	3	E202 Maj. Br. Writers II	3
H201 Am. Hist. & Govt. I	3	H202 Am. Hist. & Govt. II	3
Ms201 Music Appreciation	3	Bi202 Biology	3
PE201 Aquatics	0	Elective	3
Bi201 Biology	3		<hr/>
Elective	3		15
	<hr/> 17		

THIRD YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
A325 Art for Elem. Sch.	3	A326 Arts & Crafts	1
Ed321 Communicative Arts	2	Ed322 Communicative Arts	2
Ed323 Principles & Methods of Teaching	2	Ed328 Social Studies and Science Methods	2
M305 Basic Modern Math.	3	E321 Children's Lit.	2
PE301 Physical Education	1	FA302 First Aid	1
G301 Physical Geography	3	G302 Human Geography	3
Elective	3	M326 Math. for Elem. Teachers	2
	<hr/> 17	Elective	3
			<hr/> 16

FOURTH YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
Ed400 Student Teaching and Seminar	14	Ph401 General Philosophy	3
	<hr/> 14	Ed422 Educational Measurement	2
		E421 Maj. Am. Writers	3
		Ms422 Music for Elem. Grades	3
		Bi421 Field Biology	3
		Elective	3
			<hr/> 17

SECONDARY CURRICULUM

B.S. in Education

FIRST YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
E101 English Composition	3	E102 English Composition	3
E103 Effective Speech	2	H1102 Personal Health	2
H101 Western Civilization	3	H102 Western Civilization	3
PE101 Physical Education	0	PE102 Physical Education	0
PS101 Physical Sciences	3	PS102 Physical Sciences	3
PY101 General Psychology	3	PY102 Ed. Psychology	3
Elective	3	Elective	3
	<hr/> 17		<hr/> 17

SECOND YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
A201 Art Appreciation	3	Ms201 Music Appreciation	3
E201 Maj. Br. Writers I	3	PY231 Adolescent Psychology	2
H201 Am. Hist. & Govt. I	3	E202 Maj. Br. Writers II	3
PE201 Aquatics	0	H202 Am. Hist. & Govt. II	3
Bi201 Biology	3	Bi202 Biology	3
Elective	3	Elective	3
	<hr/> 15		<hr/> 17

THIRD YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
Ed337 Hist. & Pr. Sec. Ed.	3	FA302 First Aid	1
Ed333 Teaching Procedures	3	Ed336 Subj. Methods	3
Electives	9	Ed334 Curr. of Sec. School	2
	<hr/> 15	Electives	12
			<hr/> 18

FOURTH YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
Ed430 Student Teaching	7	Electives	15
Ed431 Test & Measurements	3		<hr/>
PH401 General Philosophy	3		15
E421 Maj. Am. Writers or			
E433 Lang. Structure (Required of English Majors)			
	<hr/> 16		

A.B. CURRICULUM

(Within Teacher Preparation Program)

FIRST YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
E101 English Composition	3	E102 English Comp. II	3
E103 Effective Speech	2	H102 Personal Health	2
H101 West. Civ. I	3	H102 West. Civ. II	3
PE101 Physical Education	0	PE102 Physical Education	0
PS101 Physical Science I	3	PS102 Physical Science II	3
Language Elective	3	Language elective	3
Math. Elective	3	Elective	3
	<hr/> 17		<hr/> 17

SECOND YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
P101 Gen. Psych.	3	PY231 Adol. Psych.	2
E201 Maj. Br. Writers I	3	E202 Maj. Br. Writers II	3
H201 American History I	3	H202 American History II	3
Bi201 Biology I	3	Bi202 Biology II	3
PE201 Aquatics	0	Electives	6
Electives	6		<hr/> 17
	<hr/> 18		

THIRD YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
Ed337 Hist. & Pr. Sec. Ed.	3	FA302 First Aid	1
Ed333 Teaching Procedures	3	Ed336 Subj. Methods	3
Electives	9	A201 Art Appreciation	3
	<hr/> 15	Electives	9
			<hr/> 16

FOURTH YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
Ed430 Student Teaching	7	Ed344 Curr. of Sec. Sch.	2
Ed431 Tests & Measurements	3	Ms201 Music Appr.	3
PH401 General Philosophy	3	Electives	9
E421 Maj. Am. Writers or	3		<hr/> 14
E433 Lang. Struture (Required of English Majors)			
	<hr/> 16		

A.B. CURRICULUM**(Non-Teaching)****FIRST YEAR**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
E101 English Comp.	3	E102 English Comp. II	3
H101 West. Civ. I	3	H102 West. Civ. II	3
PE101 Physical Ed.	0	PE102 Physical Ed.	0
PS101 Physical Science I	3	PS102 Physical Science II	3
Language Elective	3	Language Elective	3
Math. Elective	3	Elective	3
	<hr/> 15		<hr/> 15

SECOND YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
E201 Maj. Br. Writers I	3	E202 Maj. Br. Writers II	3
H201 American Hist. I	3	H202 American Hist. II	3
Bi201 Biology I	3	Bi202 Biology II	3
PE201 Aquatics	0	Electives	6
Electives	6		<hr/> 15
	<hr/> 15		

THIRD YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
A201 Art Appreciation	3	Ms201 Music Appreciation	3
Electives	12	Electives	12
	<hr/> 15		<hr/> 15

FOURTH YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PH401 Gen. Philosophy	3	PH402 Cont. Philosophy	3
E421 Maj. Am. Writers (Required of non- English Majors)	3	Electives	12
Electives	9		<hr/> 15
	<hr/> 15		

B.S. CURRICULUM

(Non-Teaching)

FIRST YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
E101 English Comp. I	3	E102 English Comp. II	3
H101 Western Civ. I	3	H102 Western Civ. II	3
PE101 Physical Ed.	0	PE102 Physical Ed.	0
PS101 Physical Science	3	PS102 Physical Science	3
Mathematics	3	Electives	6
Elective	3		<hr/>
			15

SECOND YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
E201 Maj. Br. Writers I	3	E202 Maj. Br. Writers II	3
H201 American Hist. I	3	H202 American Hist. II	3
Bi201 Biology I	3	Bi202 Biology II	3
PE201 Aquatics	0	Electives	6
Electives	6		<hr/>
	<hr/>		15
	15		

THIRD YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
A201 Art Appreciation	3	Ms201 Music Appreciation	3
Electives	12	Electives	12
	<hr/>		<hr/>
	15		15

FOURTH YEAR

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PH401 Gen. Philosophy	3	PH402 Cont. Phil.	3
E421 Major Am. Writers	3	Electives	12
Electives	9		<hr/>
	<hr/>		15
	15		

GRADUATE SCHOOL

The Graduate School offers a full-time day program leading to the degree of Master of Education. A student is normally expected to complete the program in one year. During this year, a graduate of an approved college or university may prepare for teaching in either elementary or secondary schools. Those who have previously completed a program of teacher preparation are not eligible for admission to the day Graduate School.

In the secondary program students must elect one of the following major fields:

English	History	Science
Foreign Language	Mathematics	

Appropriate undergraduate preparation is required in the student's major field.

Further information on the Graduate School may be obtained by writing to the Dean of Graduate Studies.

ELEMENTARY CURRICULUM

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
<i>Elementary School</i>		<i>Third Quarter</i>	
Ed521 Materials and Methods	15	Ed522 Materials and Methods	2
	8	Ed501 Thesis	2
PY522 Educational Psychology	3	Ed523 Educational Measurement	2
Ed505 Research Methods	2	E521 Children's Literature	2
PH531 Philosophy I	1	PH532 Philosophy II	2
	<hr/>	<i>Fourth Quarter</i>	
	16	Ed500 Student Teaching and Seminar	7
			<hr/>
			17

SECONDARY CURRICULUM

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
		<i>Third Quarter</i>	
Major Field I	3	Major Field II	2
Major Methods	2	Elective	2
Ed533 Prin. Sec. Ed.	3	PY502 Psychology II	2
PY501 Psychology I	3	PH532 Philosophy II	2
PH531 Philosophy I	3	Ed501 Thesis	2
Ed505 Research	2	<i>Fourth Quarter</i>	
	<hr/>	Ed530 Teaching and Seminar	7
	16		<hr/>
			17

PROGRAM OF CONTINUING STUDIES

This program admits candidates for the degree of Master of Education and also candidates with advanced standing for the degree of Bachelor of Science in Education. Classes in the Program of Continuing Studies are held in the late afternoon, in the evening and in the morning during the summer. More detailed information may be obtained by writing to the Director of the Program of Continuing Studies.

DEPARTMENTS

AND

COURSES OF INSTRUCTION

ART

Vincent J. Tringale, Chairman

The courses offered by the department of art are designed to develop perception, imagination, intelligence and creativity. In order to foster these abilities and to promote a general understanding of man's aesthetic nature, a program in both the theoretical and the practical aspects of art has been provided.

A101.—Introduction to Drawing and Painting (A). Elective for Freshmen and Sophomores. The course explores the basic principles and elements of design found in nature and in art. Materials used will include pencil, charcoal, crayon, pen and ink, watercolor, poster paint, and other graphic media. Three hours a week. *Three semester hours.*

A102.—Introduction to Drawing and Painting (B). Prerequisite A101. This course is a continuation of A101. The principles learned in the first semester will be applied to projects in lettering, perspective, figure drawing and illustration. The student will be encouraged to develop a personal mode of expression. Three hours a week. *Three semester hours.*

A201.—Art Appreciation. Required of Sophomores. This course introduces the student to the study of aesthetics (the philosophy of art). Analyses of important writings in aesthetics are given. The course begins with a discussion of the fundamental ideas underlying all artistic activity and with methods of analyzing works of art. The material will include the development of styles, and significant works of each period, from prehistoric to contemporary times. Illustrated lectures are supplemented by assigned readings in the history and criticism of art and by visits to the museums and collections in the vicinity of the college. Three hours a week. *Three semester hours.*

A203.—Intermediate Drawing and Painting (A). Elective for Sophomores and Juniors. Prerequisite A101 and A102. This course further develops the principles of design in the graphic arts and painting. Three hours a week. *Three semester hours.*

A204.—Intermediate Drawing and Painting (B). Prerequisite A203. The second semester will continue the exploration of painting methods and materials. The styles of contemporary painters will be analyzed and emulated. Three hours a week. *Three semester hours.*

A301.—Advanced Drawing and Painting (A). Prerequisite A203 and A204. This course introduces the student to the fundamentals of oil painting. Studies of the figure, portrait, still life, and landscape will be executed. Three hours a week. *Three semester hours.*

A302.—Advanced Drawing and Painting (B). Prerequisite A301. In the second semester the student will be expected to develop a personal style of expression through work in realistic and abstract oil paintings. Three hours a week. *Three semester hours.*

A303.—The Arts of the United States. Elective for Juniors and Seniors. The course will cover painting, sculpture and architecture in America from the time of the colonies to the present. "Revival Periods" and Contemporary styles will be discussed and analyzed. The decisive role of the arts and the artist in American life will be explored. Three hours a week. *Three semester hours.*

A304.—Modern and Contemporary Art. Elective for Juniors and Seniors. The course traces the development and influence of man's activities in Europe and the Americas in the twentieth century and its effect upon painting, sculpture, and architecture, and the minor arts. Three hours a week. *Three semester hours.*

A315.—Art for the Kindergarten-Primary Level. Required of Juniors who have elected the Kindergarten-Primary curriculum. A study of the foundations and current objectives of educators and their application to the grade levels concerned within this course. Analysis of stages of progress in the visual expression of the very young child. An inquiry into the contemporary theories of art and art education. Introduction to creative research in order to design and develop projects for teaching art. Three hours a week. *Three semester hours.*

A316.—Arts and Crafts. Required of Juniors who have elected the Kindergarten-Primary curriculum. A studio course designed to give a working knowledge of the basic techniques in two and three dimensional art deemed essential on the kindergarten-primary levels. It consists of working with the following media and techniques: clay modeling, paper and box sculpture, crayon resist, papier mache, weaving, stitchery, vegetable printing, stencil, scrap material, project, elementary graphic printing, collage, and others used in these grades. Two hours a week. *One semester hour.*

A325.—Art for the Elementary School. Required of Juniors who have selected the Elementary Curriculum. An introduction to various philosophies of art education, past and present. This course is designed to acquaint future teachers with the wide scope in the various areas of child growth and development as related in their art. Included will be research, experiments in the use of materials, experience in various forms of visual expressions, design and its application and methods of teaching art creatively. Three hours a week. *Three semester hours.*

A326.—Arts and Crafts. Required of Juniors who have elected the Elementary Curriculum. A workshop course designed to introduce the student to the wide variety of media and materials, and the use of these in two and three dimensional art projects. Media include: paper, cardboard, clay, soap, plaster, ink, crayon, and tempera paint. Projects include sculpture in construction paper, cardboard, and papier mache; additive sculpture in clay and wire; subtractive sculpture in wax, plaster or firebrick; the three printing processes, and other craft principles used in the elementary schools. Experience in these areas will equip the student for exploration in other areas of art experience. Two hours a week. *One semester hour.*

A401.—Drawing and Painting Workshop. Prerequisites A301 and A302. Elective for Seniors who have completed all of the Art Elective courses. Continuation of ceramics employing advanced techniques. Experience with the following painting media: oil, gouache, polymer tempera, egg tempera and casein. Three hours a week. *Three semester hours.*

A403.—Art Media, Process and Practice. Prerequisite A101 and A102. Elective for Juniors and Seniors. In this course, opportunity is given to the student to become acquainted with media and to develop a better understanding of the objectives, principles, and practices of art expression—to experience methods and materials of both two and three dimensional design in order to stimulate and further his creative thought and development. Opportunity for experimentation in a variety of media will be stressed. Four hours a week. *Three semester hours.*

A404.—Volume Design. Elective for Juniors and Seniors. Prerequisite A101 and A102. A course devoted to discovering the principles of form and space in architecture, sculpture and other three-dimensional arts. Students will work with a variety of sculptural materials including plaster, clay, wood, etc. Four hours a week. *Three semester hours.*

BIOLOGY

Dr. Mary E. Lynch, Chairman

To complete the work for a major, the student must complete at least 24 semester hours in biology. Certain of the advanced courses require the previous completion of work in general chemistry, organic chemistry, mathematics, and preferably biochemistry and physics. This background provides a related minor in general science.

Students may also develop a minor in biology. In addition to the required Biology I and II, electives to complete requirements for these students may be selected from the following:

Bi203.—Cryptogamic Botany

Bi301.—Vertebrate Morphogenesis

Bi303.—Histology and Histological Techniques

Bi305.—History of Biology

Bi306.—Ecology

Bi402.—Genetics

Bi407.—Field Biology

Bi101-102.—Freshman Orientation Seminar. Expected of all future biology majors. Current developments in biology will be discussed. An opportunity will be given to become familiar with the use of microscopes and other departmental equipment. One hour a week. *No credit.*

Bi201.—Biology I. Required. The course introduces the student to the principles and problems basic to an understanding of life processes. The greater emphasis is placed upon the angiosperm plant. Lectures and discussions are planned to broaden the concepts gained from laboratory work. Four hours a week. *Three semester hours.*

Bi202.—Biology II. Required. Prerequisite Bi201. Emphasis is upon animal life. Application is made of the major principles learned in Bi201. Lectures, demonstrations, laboratory work, and readings will be used. Four hours a week. *Three semester hours.*

Bi204.—Cryptogamic Botany. Elective. Prerequisite Bi201. A consideration of the structure, functioning, and life cycles of significant representatives of the algae, fungi, lichens, liverworts, mosses, and ferns. Two lectures, two hours in laboratory. *Three semester hours.*

Bi205-206.—Sophomore Seminar. Expected of all future biology majors. Others with special interest may apply. The laboratory problems treated in the sophomore biology course will be developed in greater depth. One hour a week. *No credit.*

Bi301.—Vertebrate Morphogenesis. Elective. Prerequisite Bi201-202. An integration of vertebrate comparative anatomy and embryology which considers mechanisms, interdependence, and the factors underlying structural transformations. Two lectures, six hours in laboratory. *Five semester hours.*

Bi303.—Histology and Histological Techniques. Elective. Prerequisite Bi201-202. A study of cells and tissues with attention given to their relation to the anatomy and physiology of the whole organism. Practice will be given in the preparation of tissues for microscopic study. Two lectures, two hours in laboratory. *Three semester hours.*

Bi304.—Introduction to Experimental Biology: Limnological Problems. Required of biology majors. Prerequisites: Bi201-202, Bi204, Ch101-102. An introduction to the particular working of the scientific mind through participation both as an individual and as a team member in work on a series of limnological investigatory units. Six hours in laboratory. *Three semester hours.*

Bi305.—History of Biology. Elective. A survey of the evolution of knowledge of the biotic world leading to a concept of the present state of biological science and the problems it faces. One lecture. *One semester hour.*

Bi306.—Ecology. Prerequisite: B201-202. The interrelationships of plants and animals with their environment form the basis of this course. Biogeography, systematics, behavior, and adaptation will be correlated with the physical and chemical aspects of their environment. Three optional field trips. Three lectures. *Three semester hours credit.*

Bi310.—Metabolic Basis of Cellular Activity. This is an elective course for biology majors. Prerequisites: Bi201-202, Ch101, 102, 301. It is required of all who plan to take Cellular Physiology (Bi401). The course will include a study of the common metabolites and their biological interconversions. Some methods of analysis and separation within the framework of the vital organism will be studied. Two lectures, four hours in laboratory. *Four semester hours.*

Bi401.—Cellular Physiology. Elective. Prerequisites: Bi201-202, Ch101-102, Ch301. Ch402 is strongly recommended. A study of the major problems of plant and animal physiology as seen in the single cell. Functional organization, exchange of materials across cell membranes, energy and matter transformation, irritability, contractility, growth, and cell division will be studied. Two lectures, four hours in laboratory. *Four semester hours.*

Bi402.—Genetics. Elective. Prerequisite Bi201-202. An introduction to the principles and physical basis of heredity. Laboratory experiences will include fundamental techniques used in modern genetic research. Two lectures, two hours in laboratory. *Three semester units.*

Bi404.—Microbiology. Elective. Prerequisites Bi201-202, Ch101-102, Ch301. Fundamentals of structure, growth, and habitat of the major groups of microorganisms. Laboratory experiences will give training in the basic methods of observation, propagation, and study of microorganisms. Two lectures, four hours in laboratory. *Four semester hours.*

Bi405.—Special Problems in Biology. Open only to biology majors. Prerequisite Bi304. Investigations into an open-ended biological problem chosen from the student's special interests and needs. Four hours in laboratory. *Two semester hours.*

Bi407.—Advanced Microbiology. Prerequisite: Bi404 Microbiology. A study of the isolation and identification of microbiotic forms. Principles of immunology and serology as related to parasitic forms will be discussed. Lecture, 2 hours; Laboratory, 4 hours. Credit. *Four semester hours.*

Bi408. — Coordinating Seminar in Biology. Open only to biology majors. Readings, lectures, and discussions designed to unify and strengthen the background of students in modern biology. Two hours in class. *Two semester hours.*

Bi421.—Field Biology. Required of all Seniors in the kindergarten and elementary curricula. Elective for all others in either the Senior or Junior year. Essentially a course in natural history stressing the study of local plant and animal life. Identification, adaptation, and ecological relationship are the

areas of approach. Conservation problems and current practices are discussed throughout the course. Three hours in class. *Three semester hours.*

Bi536.—Biological Science for Secondary Teachers. Elective for graduate students who are preparing to teach science on the secondary level. The rationale of the Biological Science Curriculum Study is the basis of the course. Attention is given to the development of demonstration and laboratory techniques. The use of living materials is stressed. Four class hours. One quarter. *Two semester hours.*

CHEMISTRY

Dr. Francis W. McCarthy, Chairman

The department offers both major and minor programs in chemistry. Programs may be designed for those preparing to teach chemistry in high schools, for those desiring graduate study in the field, and for those who seek to enter industry. The program of study approved by the American Chemistry Society is offered for those planning graduate study. All Chemistry majors must complete Ch101-102, Ch201-202, Ch301-302, and Ch303-304.

Ch101.—Inorganic Chemistry. Structure of matter, periodicity, states of matter, compound formation, properties of solutions will be included. Three lectures and four hours of laboratory per week. Required of all students who are candidates for Bachelor of Arts with major in Chemistry. *Five semester hours.*

Ch102.—Inorganic Chemistry and Qualitative Analysis. Ionization, acidity and basicity, inorganic synthesis and analysis will be covered in this portion of the course. Prerequisite is Ch101. Three lectures and four hours of laboratory per week. Required of all students who are candidates for Bachelor of Arts with major in Chemistry. *Five semester hours.*

Ch103. — General Chemistry I. The subject matter of this course will be an introduction to the science of chemistry with descriptive materials concerning elements, compounds and the basic principles involved in the periodic classification of the elements. The relationship between structure and properties, the kinetic molecular theory, and other pertinent laws will be discussed. Lectures will be supplemented by demonstrations and visual aids. Three lectures per week. *Three semester hours.*

Ch104.—General Chemistry II. A continuation of Ch103, this section of the course will deal with the preparation, physical and chemical properties of the more common elements and compounds. A survey of nuclear chemistry will be included. Three lectures per week. *Three semester hours.*

Ch201.—Quantitative Analysis I. This course is required of Sophomores in the chemistry programs and includes lectures, discussions, and laboratory exercises on the fundamentals of gravimetric analysis. Emphasis will be on the stoichiometric separation of chemical constituents through precipitation

and the interpretation of analytical data. Prerequisites: Ch101-Ch102. Two lectures and one four hour laboratory each week. *Four semester hours.*

Ch202.—Quantitative Analysis II. Continuing in the format of Ch201 this semester's work covers the subject of volumetric analysis including acid-base titrations, redox reactions, complex ion formation and precipitation reactions. Prerequisite: Ch201. Two lectures and one four hour laboratory each week. *Four semester hours.*

Ch301.—Organic Chemistry I. The preparation, structure and reactions of typical organic compounds such as the aliphatic, alicyclic and aromatic hydrocarbons will be studied. 3 lectures and four hours of laboratory per week. Required of all students who are candidates for a major in Chemistry. *Five semester hours.*

Ch302.—Organic Chemistry II. A continuation of Ch301, this portion of the course will continue the study of monofunctional and polyfunctional compounds. 3 lectures and four hours of laboratory per week, second semester. Ch301 is a prerequisite. Required of all students who are candidates for a major in Chemistry. *Five semester hours.*

Ch303.—Physical Chemistry I. Laws and nature of gases, liquids and solids, properties of solutions and thermochemistry. 3 lectures and four hours of laboratory per week. Required of all students who are candidates for a major in Chemistry. *Five semester hours.*

Ch304.—Physical Chemistry II. A continuation of Ch303, this portion of the course will consider types of equilibria, chemical kinetics and electrochemistry. 3 lectures and four hours of laboratory per week, second semester. Ch303 is a prerequisite. Required of all students who are candidates for a major in Chemistry. *Five semester hours.*

Ch401.—Advanced Inorganic Chemistry. This is an elective course for seniors who are candidates for a major in Chemistry. Advanced chemistry of atomic structure and chemical properties such as coordination complexes, inorganic stereoisomerism, complex ionic crystals. 2 lectures and four hours of laboratory per week. *Four semester hours.*

Ch402.—Biochemistry. This is an elective course for seniors who are candidates for a major in Chemistry. The nature of protein, fat, carbohydrate, their reactions and role in living organisms will be studied. 2 lectures and four laboratory hours per week. *Four semester hours.*

Ch403.—Instrumental Methods of Analysis. This is an elective course for seniors who are candidates for a major in Chemistry. Use of instrumental and physiochemical methods of analytical chemistry accompanied by a discussion of the theory of operation will be treated in this course. Laboratory will involve the use of techniques such as infra-red spectroscopy. 2 lectures and four hours of laboratory per week. *Four semester hours.*

Ch404.—Qualitative Organic Analysis. This course is elective for seniors who are candidates for a major in Chemistry. Qualitative and quan-

titative analysis of selected organic compounds will be used to teach the fundamentals of research techniques in the field of organic chemistry. 2 lectures and four hours of laboratory per week. *Four semester hours.*

ECONOMICS

Dr. Lauréat J. Bernard, Chairman

Economics is offered through the facilities of the Department of History. An economics major is available for all non-teaching candidates working for the B.S. or A.B. degrees. Economics majors are required to complete the following minimum courses before graduation: Ec101, Ec102, Ec203, Ec301, Ec302 and three other 3-hour courses acceptable for economics credits. All major programs should be planned in consultation with the Department Chairman or his assistants.

A minor in economics must complete Ec101, Ec102, and Ec203 and three other courses accentuating economic life or the second area of employment the student might wish to consider after graduating from college.

Ec101.—Principles of Economics I. An elective for Freshmen, Sophomores, Juniors, and Seniors. A description and study of basic economic principles and institutions and their application to modern life and thought. Includes such topics as money and banking, monetary and fiscal policies and problems, and business cycles. Three hours a week. *Three semester hours.*

Ec102.—Principles of Economics II. An elective for Freshmen, Sophomores, Juniors, and Seniors. Prerequisite: Ec101. This course proceeds to study the basic principles of price theory, the problems of underdeveloped countries, economic growth and development, international trade, and comparative economic systems. Three hours a week. *Three semester hours.*

Ec203.—Money, Banking, and Credit. Elective for Sophomores, Juniors, and Seniors. Prerequisite: Ec101. Concentration upon money in the modern economy; its value and related problems. Stress also on the development of commercial banking, the Federal Reserve System, the relationship of monetary policy to fiscal and general economic policies, and international monetary problems. Three hours a week. *Three semester hours.*

Ec204.—Labor Economics. An elective for Sophomores, Juniors, and Seniors. Prerequisite: Ec102. An introductory study for labor markets and labor institutions. Concepts to be stressed include: the labor force, problems of measurement, analysis and manpower planning, economic analysis of labor markets, growth and development of labor institutions, and theories of the labor movement. Three hours a week. *Three semester hours.*

Ec205.—Economic Development. Elective for Sophomores, Juniors, and Seniors. Prerequisite: Ec102. A study of the special problems in the growth of underdeveloped countries: capital requirements, institutional change, stages

of growth, change in labor productivity, population problems, free market vs. central planning. Three hours a week. *Three semester hours.*

Ec301.—Intermediate Economic Theory I: Macroeconomics. Prerequisites: Ec101 and Ec102. Theory of income determination; problems of inflation and recession; economic stabilization through government spending and taxation; the role of foreign trade in the economy; problems of the national debt. Three hours a week. *Three semester hours.*

Ec302.—Intermediate Economic Theory II: Microeconomics. Prerequisites: Ec101 and Ec102. Theory of the firm and market analysis; role of prices in allocating resources; theory of consumer demand; consideration of welfare complications under perfect competition and monopoly. Three hours a week. *Three semester hours.*

Ec303.—History of Economic Thought. Elective for Sophomores, Juniors, and Seniors. Prerequisites: Ec101 and Ec102. The development of economic theory from its beginnings through John Maynard Keynes and modern economic doctrines, with the view of understanding the present economic world in the light of past and current theory. Three hours a week. *Three semester hours.*

Ec305.—International Economics. An elective for Sophomores, Juniors, and Seniors. Prerequisite: Ec203 or consent of the instructor. This course will cover the following: survey of world trade patterns; comparative ad-



vantage and its effects; international monetary movements and the balance of payments situation; the role of the United States and international agencies in the international economy. Three hours a week. *Three semester hours.*

Ec306.—American Economic History I. An elective for Juniors and Seniors. Prerequisite: H202 and Ec102. A study of resource allocation and economic growth in the United States from colonial times to the development of the factory system. Special attention to be given to sectional analysis and economic determination of key historical events. Three hours a week. *Three semester hours.*

Ec307.—American Economic History II. An elective for Juniors and Seniors. Continues and presupposes Ec306. This course carries American economic history from the development of the factory system through the complexities found in the economics of the United States of the twentieth century. Three hours a week. *Three semester hours.*

Ec308.—Government and Business. An elective for Juniors and Seniors. Prerequisite: Ec102. This course will investigate the economic background and development of governmental regulatory actions relating to business practices. Particular attention to be given to anti-trust and fair trade legislations, the development and effects of these; and consumer-protective laws. Three hours a week. *Three semester hours.*

Ec401.—Comparative Economics. An elective for Juniors and Seniors. Prerequisites: A course in elementary economics. The theory, structure, practice and problems of major foreign economic systems will be analyzed and compared, with emphasis on Great Britain, the USSR, and the underdeveloped nations and on their differing answers to the basic economic questions. Three hours a week. *Three semester hours.*

Ec402.—Urban Economics. Prerequisite: Ec101 or Ec102. A study of the various economic problems of urban areas caused by shifts in population; industry; the increased demand for public services the difficulties in raising adequate revenues and the development of the "strip city." Three hours a week. *Three semester hours.*

Ec403.—The Economics of Underprivileged Countries. An elective for Juniors and Seniors. Prerequisite: Ec401 or consent of the instructor. This course is a study of resource development and allocation and of economic growth in underdeveloped countries. To be given special attention: problems of capital accumulation, the role of developed nations *vis à vis* the marginal economic systems, and the part played by international organizations in the growth process. Three hours a week. *Three semester hours.*

ELEMENTARY EDUCATION

Dr. Lawrence J. Newell, Chairman

The elementary and kindergarten-primary curricula have as a principal objective the thorough professional preparation of teachers at the levels indi-

cated. To this end basic courses are offered and required in general and specific methods of teaching. In addition, experiences in the evaluation of learning and observation of youngsters in the classroom room setting are considered essential. To these areas of preparation is added a full semester of supervised student teaching.

Ed311.—Communicative Arts, Reading. Required of Juniors who elect the Kindergarten-Primary curriculum. A study is made of the basic principles, pertinent techniques, and research relating to the fundamentals of the teaching of reading at the Primary level. Curriculum guides, basal reading systems, reading tests, and visual aids are examined. Three hours a week. *Two semester hours.*

Ed312.—Communicative Arts, Language. Required of Juniors who elect the Kindergarten-Primary curriculum. The language course deals with a study of language development, language experiences and techniques for language teaching at the Primary level. The techniques of handwriting and spelling are included in the study of written communication. Three hours a week. *Two semester hours.*

Ed313-314.—Kindergarten-Primary Principles. Required of Juniors who elect the Kindergarten-Primary curriculum. This course presents techniques of teaching in the Kindergarten and Primary Grades. Observation and participation in classroom situations in the laboratory schools are provided. Two class hours a week throughout the year. *Four semester hours.*

Ed321.—Communicative Arts, Reading. Required of Juniors who elect the Elementary curriculum. A study is made of the nature of the reading process, the history and the development phases of the reading program, and the principles for effective teaching of reading. A survey is made of curriculum materials and basal reading series currently employed in the elementary schools. Three hours a week. *Two semester hours.*

Ed322.—Communicative Arts, Language. Required of Juniors who elect the Elementary curriculum. The language course deals with the sequences of language development, the types of language experiences, and specific techniques for teaching language, handwriting, and spelling at the primary and upper elementary level. Three hours a week. *Two semester hours.*

Ed323.—Principles and Current Techniques of Teaching. Required of Juniors who elect the Elementary Curriculum. This course includes a study of the teaching-learning process, desired learning outcomes, and the guiding principles for effective planning and teaching in the elementary school. Two class hours per week. In addition there will be ample opportunity to observe and participate in the classrooms of the laboratory school. *Two semester hours.*

Ed328.—Social Studies and Science Methods. Required of Juniors who elect the Elementary Curriculum. An examination of the methods and materials basic to carrying on a program in social studies and science in the elementary grades. Two hours a week. *Two semester hours.*

Ed400.—Student Teaching and Seminar. Required of Seniors in Kindergarten-Primary and Elementary courses. A laboratory course of sixteen weeks duration providing full-time student teaching in public schools and affording many opportunities for application and extension of the understandings developed during the previous professional courses. The practice-teaching period is divided into two segments at differing instructional levels. Under the guidance of the regular classroom teacher and the college supervisor, the student is expected to assume an increasing responsibility for the total teaching-learning situation. One day each week the student teachers return to campus for the Seminar which provides opportunities for meeting and solving individual and group problems arising from experiences in the classroom. In addition, the Seminar is concerned with topics such as professional ethics, school records, securing a teaching position, current trends in education, and in-service professional growth. *Fourteen semester hours.*

Ed422.—Educational Measurement. Required of Seniors who elect the Elementary or Kindergarten-Primary programs. A survey of measurement and evaluation procedures as they apply to the day by day activities of the elementary school teacher. Two hours a week. *Two semester hours.*

Ed500.—Student Teaching and Seminar. Required of Graduate Students. A laboratory course of eight weeks duration providing full-time student teaching in public schools. This course is designed to give the graduate students a practical application of the principles developed in the previous professional courses. Each student is assigned to an experienced classroom teacher who guides and trains him for the eight weeks. A college supervisor visits him at least three times and coaches him in his work. One day each week the student teacher returns to campus for the Seminar at which individual and group problems are discussed. *Seven semester hours.*

Ed501.—Thesis. Each graduate student must write a thesis of from ten thousand to twenty thousand words in length on a subject in his field. *Two semester hours.*

Ed505.—Research and Evaluation. A required course in the Graduate School. The course covers (1) the scholarly use of libraries, (2) the selection, delimitation and outlining of topics for study, (3) proper documentation of term papers and thesis, (4) definitions of research, (5) research methods and techniques, and (6) the evaluation of research. *Two semester hours.*

Ed521-522.—Elementary School Methods and Materials. Required of graduate students who are preparing to teach in the elementary schools. A presentation of the various areas of the curriculum in a unified fashion. Specific attention will be given to the construction of the curriculum, techniques of teaching common to the several subject matter areas, materials and methods unique to the teaching of reading, language, arithmetic, social studies, science, art and music. Provision will be made for observation and limited practice teaching in the laboratory school. *Ten semester hours.*

Ed523.—Educational Measurement. A survey of the nature of measure-

ment and evaluation in relation to the process of teaching. The course will emphasize the construction of tests, the evaluation of standardized instruments and the statistical ideas and operations needed for proper interpretation and use of test results. Four hours a week. *Two semester hours.*

SECONDARY EDUCATION

Dr. William J. Fitzpatrick, Chairman

This department offers those courses which give the student the necessary qualifications for teaching in a secondary school. Theory and practice are inter-related to provide the finest possible experience for entrance into the educational profession.

Ed333.—Procedures for Teaching in the Secondary School. Required of Juniors in the Secondary Education curriculum. This course includes a study of the nature and the development tasks of the adolescent; the role of the teacher in establishing a favorable setting for learning; routines and procedures for class organization; the handling of discipline; planning for unit and daily teaching; individual and group methods of instruction evaluative techniques; and the guidance responsibilities of the teacher. A series of observations will be made in the laboratory school and in secondary schools of neighboring communities. Three hours a week. *Three semester hours.*

Ed334.—Curriculum of the Secondary School. This course is required in the Secondary Education program. Among the major topics to be covered in this course are the following: horizontal and vertical patterns of organization; criteria for curriculum evaluation; application to modern curriculum guides, trends in curriculum development, such as life-adjustment education, cooperative education, team-teaching, and summer-school programs. Two hours a week. *Two semester hours.*

Ed336.Bi.—Methods of Teaching Biology in the Secondary School. Required of Juniors majoring in Biology in the Secondary School Curriculum. This course includes a consideration of the aims and principles involved in the teaching of Biology. Emphasis is placed upon recent developments, especially the BSCS programs. Opportunities for classroom observation and participation are provided. Prerequisite: Ed333. Three hours a week. *Three semester hours.*

Ed336-E.—Methods of Teaching English in the Secondary School. Required of Juniors majoring in English in the Secondary School Curriculum. This course includes a consideration of the aims and principles involved in the teaching of grammar, composition, and literature. Classroom experiences are provided at the laboratory school. Prerequisite: Ed333. Three hours a week. *Three semester hours.*

Ed336-H.—Methods of Teaching Social Studies in the Secondary School. Required of Juniors majoring in Social Studies in the Secondary

School Curriculum. This course includes a consideration of the aims and principles involved in the teaching of History, Geography, Government, Economics, and Problems of Democracy. Classroom experiences are provided at the laboratory school. Prerequisite Ed333. Three hours a week. *Three semester hours.*

Ed336-L.—Methods of Teaching Modern Languages in the Secondary School. Required of Juniors majoring in French or Spanish in the Secondary School Curriculum. This course includes a consideration of the principles of language learning along with the methods and materials for teaching modern languages. Classroom experiences are provided. Prerequisite: Ed333. Three hours a week. *Three semester hours.*

Ed336-M.—Methods of Teaching Mathematics in the Secondary School. Required of Juniors majoring in Mathematics in the Secondary School Curriculum. This course includes a consideration of the aims and principles involved in the teaching of Mathematics. Classroom experiences are provided at the laboratory school. Prerequisite: Ed333. Three hours a week. *Three semester hours.*

Ed336-PS.—Methods of Teaching Science in the Secondary School. Required of Juniors majoring in Science in the Secondary School Curriculum. This course includes a consideration of the aims and principles involved in the teaching of astronomy, chemistry, geology and physics. Classroom experiences at the laboratory school are provided. Prerequisite: Ed333. Three hours a week. *Three semester hours.*

Ed337.—History and Principles of Secondary Education. This course is required of all Juniors in the Secondary Education Program. It will examine the historical foundations of secondary education in the United States with its particular reference to early and contemporary European schools. The principles of secondary education are based on the aims and purposes of our schools and their necessary articulation with elementary and higher education. Topics to be covered in this course include a history of early secondary education in America and Europe, purposes of our schools, leaders in the profession, the development of local, state and federal responsibilities, legal statutes, comparative and contemporary problems in education. Three hours a week. *Three semester hours.*

Ed430.—Student Teaching and Seminar. Required of Seniors in the Secondary Curriculum. A laboratory course of eight weeks duration providing full-time student teaching in public secondary schools and affording opportunities for application and extension of the understandings developed during the previous professional courses. Under the guidance of the regular classroom teacher and the college supervisor, the student is expected to assume an increasing responsibility for the total teaching-learning situation. One day each week the student teachers return to campus for the Seminar which provides opportunities for meeting and solving individual and group problems arising from experiences in the classroom. In addition, the Seminar is con-

cerned with topics such as professional ethics, school records, securing a teaching position, current trends in education, and in-service professional growth. *Seven semester hours.*

Ed431.—Tests and Measurement. Required of students studying secondary education. This course includes the development of measurement in education and the statistical analysis of test results. General principles of test construction as well as the construction of specific types of items are studied. Projects are originated for use in testing programs. Recent achievements and intelligence tests at the secondary level are examined, members of the class also assist in testing programs. Six hours a weeks for one quarter. *Three semester hours.*

Ed505.—Research and Evaluation. A required course in the Graduate School. The course covers (1) the scholarly use of libraries; (2) the selection, delimitation and outlining of topics for study; (3) proper documentation of term papers and theses; (4) definitions of research (5) research methods and techniques, and (6) the evaluation of research. *Two semester hours.*

Ed530.—Student Teaching and Seminar. Required of Graduate Students. A laboratory course of eight weeks duration providing full-time student teaching in public schools. This course is designed to give the graduate students a practical application of the principles developed in the previous professional courses. Each student is assigned to an experienced classroom teacher who guides and trains him for eight weeks. A college supervisor visits him at least three times and coaches him in his work. One day each week the student teacher returns to campus for the Seminar at which individuals and group problems are discussed. *Seven semester hours.*

Ed533.—Principles of Secondary Education. Required of graduate students who are preparing to teach in secondary schools. Basic concepts in this course include: (1) the meaning of education in a democracy; (2) democracy in education, with special reference to individual differences in pupil capabilities and needs; (3) curriculum adaptations; (4) methods of teaching; (5) pupil organization for class instruction and co-curricular activities; (6) evaluation of pupil growth and development; (7) steps to be taken in the process of modernizing the school with special reference to organization and administration problems. Three hours a week. *Three semester hours.*

Ed536-E.—Methods of Teaching English. Required of graduate students who are preparing to teach English at the secondary level. This course includes (1) a consideration of the aims and principles involved in the teaching of composition and literature; (2) the readings of representative texts and scientific studies (3) the preparation and presentation of units of work meeting the needs of typical classroom situations. Two hours a week. *Two semester hours.*

Ed536-F.—Methods of Teaching French. Required of graduate students who are preparing to teach French in the secondary school. Modern theories on the teaching of foreign language. Subject matter and techniques in the

teaching of French in Grades VII-XII. Two hours a week. *Two semester hours.*

Ed536-SP.—Methods of Teaching Spanish. Required of graduate students preparing to teach Spanish in secondary schools. The course includes a study of modern theories of teaching foreign languages; subject matter, methods, and materials for Grade VII-XII. Two hours a week. *Two semester hours.*

Ed536H.—Methods in Social Studies. Required of graduate students who are preparing to teach social studies at the secondary level. This course includes a consideration of the aims and principles involved in teaching of social studies. Classroom experiences are provided at the laboratory school. Two hours a week. *Two semester hours.*

Ed536-M.—Methods of Teaching Secondary School Mathematics. Required of graduate students who are preparing to teach in secondary schools. In this course instruction is given in methods of teaching mathematics in Grades VII-XII, including percentage, measurement, and elementary algebra. Demonstration lessons are a part of the course. Two hours a week. *Two semester hours.*

Ed536-PS.—The Teaching of General Science. Required of graduate students who are preparing to teach science at the secondary school level. Representative topics to be treated include the techniques of demonstration, the selection and use of reference material and test material, class projects and the maintenance and procurement of science supplies. Directed discussion and individual project work. Two hours a week. *Two semester hours.*

ENGLISH

Dr. William H. Marnell, Chairman

The department of English offers to all students instruction in writing and speech, and introductory courses in British and American literature. It further offers courses in linguistics and in literature, by period or type, from Chaucer to the present day. Students majoring in English take at least twenty-four semester hours in the field exclusive of prerequisite courses (E101-2, 103, 201-2). The following courses are required in the teacher training curriculum: E101-2, 103, 201-2, 321 (elementary division), 331-2 (English majors, secondary division), 421 (elementary division; non-English majors, secondary division), 433 (English majors). The required courses in the non-teaching curriculum are E101-2, 201-2, 331-2 (English major), 421 (non-English majors), 434 (English majors).

A student must have credit for E101-2 and 201-2 before taking courses numbered 301 and higher.

E101-102.—English Composition. Required of Freshman. The course includes a review of formal grammar, training in sentence structure and para-

graph development, and instruction in the writing of expository themes. Assigned readings. Three hours a week. *Three semester hours per semester.*

E103.—Effective Speech. Required of Freshmen in all teacher preparation programs. The course has as its objective developing effective voices in the students and preparing them to meet the demands of the speech situations which they will encounter in their professional lives. Two hours a week. *Two semester hours.*

E201.—Major British Writers I. Required of Sophomores. A study of major works by Chaucer, Shakespeare, Donne, Milton, Pope, and Swift. Three hours a week. *Three semester hours.*

E202.—Major British Writers II. Required of Sophomores. A study of major works by Wordsworth, Keats, Tennyson, Browning, Yeats, and Eliot. Three hours a week. *Three semester hours.*

E203.—Masterpieces of Western Literature I. Readings and discussion of selected master pieces of western literature from Antiquity through the Renaissance. Three hours a week. *Three semester hours.*

E204.—Masterpieces of Western Literature II. A continuation of E203 involving the study of masterpieces of western literature from the Enlightenment through the twentieth century. Three hours a week. *Three semester hours.*

E301.—Shakespeare I. The tragedies. Three hours a week. *Three semester hours.*

E302.—Shakespeare II. The comedies and historical plays. Three hours a week. *Three semester hours.*

E303.—The Romantic Movement. A study of the poetry of Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats. Three hours a week. *Three semester hours.*

E304.—Five Poets. A study of the poetic achievement of five major poets. In 1965-66 the poets studied will be Donne, Browning, Hopkins, Dickinson, and Eliot. Three hours a week. *Three semester hours.*

E305.—Nineteenth Century Prose I. A study of the novels of Austen, Scott, and Dickens, and the major works of Carlyle, Macaulay, and Mill. Three hours a week. *Three semester hours.*

E306.—Nineteenth Century Prose II. A study of the novels of Thackeray, George Eliot, Meredith, and Hardy, and the major prose works of Newman, Arnold, Ruskin, Morris, and Pater. Three hours a week. *Three semester hours.*

E307.—Modern Drama I. A study of major modern dramatists and their work, starting with Ibsen. Three hours a week. *Three semester hours.*

E308.—Modern Drama II. A continuation of E307, with primary stress

on more recent dramatists and trends in drama. E308 may be taken by students who have not taken E307, although E307 offers desirable preparation. Three hours a week. *Three semester hours.*

E309.—Chaucer. *The Book of the Duchess, The House of Fame, The Parliament of Fowls, Troilus and Criseyde* (in part), *The Canterbury Tales* (in part). Three hours a week. *Three semester hours.*

E310.—Milton. Horton poems: *Areopagitica* and other prose works; sonnets; *Paradise Lost, Paradise Regained, Samson Agonistes*. Three hours a week. *Three semester hours.*

E311.—English Literature, 1660-1749. The major writers of the Restoration and Augustan periods, exclusive of Milton. Primary attention is paid to Dryden, Pope, and Swift. Three hours a week. *Three semester hours.*

E312.—Old and Middle English Literature. A study in translation of selected masterpieces in various genres from Anglo-Saxon times to 1500, exclusive of Chaucer. *Beowulf, Sir Gawain and the Green Knight, Piers Plowman, Malory's Morte d'Arthur* (in part), romances, ballads, lyric poems, plays. Three hours a week. *Three semester hours.*

E313.—English Literature in the Renaissance. A study of the major non-dramatic works of the sixteenth century with emphasis upon Spenser, Shakespeare, Donne, and Jonson. Three hours a week. *Three semester hours.*



E314.—Literary Criticism. A course in criticism intended primarily for majors in English and designed to acquaint them with the vocabulary of criticism through a diagnostic and topical approach to modes (heroic, tragic, lyric) and techniques (classicism, romanticism, symbolism, myth). Short papers and reading in both the critical and belletristic literatures. The student will be encouraged to develop his own critical attitudes. Three hours a week. *Three semester hours.*

E321.—Literature for Children. Required of Juniors in the kindergarten-primary and elementary curricula. The aims of the course are to acquaint the students with the field of children's literature and to provide them with a standard of judgment for the evaluation of children's books. Two hours a week. *Two semester hours.*

E322.—Advanced Writing. A course for students interested in doing considerable advance expository and creative writing. The course includes reading in contemporary and classical works. Three hours a week. *Three semester hours.*

E331.—American Literature I. Required of English majors in the Junior class. A study of American literature from Emerson to Whitman. Three hours a week. *Three semester hours.*

E332.—American Literature II. A continuation in E331. A study of American literature from Mark Twain to Eliot. Three hours a week. *Three semester hours.*

E402.—The Age of Johnson. A study of major works of English literature written during the second half of the eighteenth century. Three hours a week. *Three semester hours.*

E403.—Emerson, Thoreau, and Transcendentalism. A study of American romantic idealists. In a broader sense, the course undertakes a study of the social and intellectual movements of the first half of the nineteenth century. Three hours a week. *Three semester hours.*

E404.—Victorian Poetry. A study of the poetry of Tennyson, Browning, Arnold, and Rossetti, Morris, Swinburne, Meredith, Hardy and Hopkins. Three hours a week. *Three semester hours.*

E406.—The Modern Novel. The course includes an analysis of the novel as an art form, a survey of the novel in English and American literature, and the reading of ten notable modern novels. Three hours a week. *Three semester hours.*

E407.—Modern Short Story. A study of selected American and British short stories. Three hours a week. *Three semester hours.*

E408.—Hawthorne, Melville, and James. A course of reading and discussion of the major works of these writers. Three hours a week. *Three semester hours.*

E410.—English Drama, Exclusive of Shakespeare, 1580-1642. A reading of major dramas of the Elizabethan and Jacobean periods. Three hours a week. *Three semester hours.*

E411.—English Literature, 1600-1660. The major writers of the period exclusive of the dramatists. Three hours a week. *Three semester hours.*

E412.—Restoration Drama. A reading of major dramas of the Restoration period, 1660-1700. Three hours a week. *Three semester hours.*

E413.—Contemporary Poetry. A reading of selected contemporary poets, American and British. Three hours a week. *Three semester hours.*

E421.—Major American Writers. Required of Seniors not majoring in English. A study of major figures in American literature. Three hours a week or its equivalent. *Three semester hours.*

E433.—The Structure of the English Language. A course in the grammatical, morphological, and syntactical structure of the English language. This course is required of English majors in the teacher-training program. Three hours a week. *Three semester hours.*

E434.—The History of the English Language. A course in the historical development of the English language. Illustrative readings from its various periods. This course is required of English majors in the non-teaching curriculum; elective for others. Three hours a week. *Three semester hours.*

E490.—Special Topics. Studies in the history of literary criticism. This course is required of candidates for honors in English. Three hours a week. *Three semester hours.*

E501.—Contemporary British and American Literature I. Required of graduate students majoring in English. A study of the contributions of present day writers in prose fiction and biography. Three hours a week. *Three semester hours.*

E502.—Contemporary British and American Literature II. Required of graduate students majoring in English. A study of the contributions of present day writers in drama and poetry. Four hours a week, for one quarter. *Two semester hours.*

E521.—Children's Literature. Required of graduate students in the elementary curriculum. Two hours a week. *Two semester hours.*

FOREIGN LANGUAGES

Dr. Richard W. Newman, Chairman

The Department of Foreign Languages offers courses in French, German, Russian and Spanish. Students may major or minor in French and Spanish, or may elect courses to satisfy the foreign language requirement for the A.B. degree or for general cultural purposes.

Foreign Language Requirement for the Bachelor of Arts Degree:

The foreign language requirement may be met by the successful completion of a course at the advanced level (131-132) or above, or by the successful completion of two year's work (12 semester hours) in *one* language at the college level. This requirement may also be met by a superior performance on the achievement test of the C.E.E.B.

Examples of course combinations satisfying foreign language requirements for A.B. degree:

- (1) Sp. 111-112. (Elementary Spanish) and Sp121-122. (Intermediate Spanish); 12 semester hours.
- (2) G131-132. (Advanced German); 6 semester hours.
- (3) F121-122. (Intermediate French) and F131-132. (Advanced French); 12 semester hours.
- (4) R131-132. (Advanced Russian); 6 semester hours.

Requirements for Majors:

Majors shall complete at least 24 semester hours in the major language, beyond the advanced level. For the major in French these shall include **Survey of French Literature, French Composition and Conversation, and Spoken French.** For the major in Spanish, these shall include **Survey of Spanish Literature, Spanish Composition and Conversation, and Spoken Spanish.**

FRENCH

F121-122.—Intermediate French. Elective for Freshmen. The course includes constant practice in hearing and speaking French, a review of grammar, written summaries of readings and simple original compositions. Language laboratory. Prerequisite: Two years of high school French. *Three semester hours per semester.*

F131-132.—Advanced French. Elective for Freshmen and Sophomores. The course includes constant aural and oral practice; correction of individual pronunciation difficulties intensive readings in French literature; supplemental readings with written summaries in French. Language laboratory. Prerequisite: Three or more years of high school French or F121-122. *Three semester hours per semester.*

F142.—Development of Reading Skills in French. This course aims at the development of reading ability through the study of French construction and idioms, identification of tense and verb form, and building of vocabulary. Reading in prose and poetry, discussions, research. Conducted in French. *Three semester hours.*

F211-212.—Survey of French Literature. Elective for Sophomores and required of majors in French. Representative readings in French literature from the Middle Ages to the present. Lectures, discussions, readings and reports. Conducted in French. Prerequisite: F131-132. *Three semester hours per semester.*

F311-312.—French Composition and Conversation. Elective for Juniors and required of majors in French. Advanced exercises in written and spoken French. Translation of literary passages to and from French. Original compositions and oral reports. Prerequisite: F-131-132. *Three semester hours per semester.*

F314.—Applied Linguistics: French. This course includes a linguistic analysis of French phonology, morphology, and syntax and a systematic Comparison of the structures of French and English. Prerequisite: F311-312. *Three semester hours.*

F321.—French Literature of the Seventeenth Century. Elective for Juniors and Seniors. The course includes a study of the classical period with special emphasis given to the theater. Lectures discussions, readings, and reports. Conducted in French. Prerequisite: F211-212. *Three semester hours.*

F322.—French Literature of the Eighteenth Century. Elective for Juniors and Seniors. The course includes a study of the Age of Enlightenment. Lectures, discussions, readings, and reports. Conducted in French. Prerequisite: F211-212. *Three semester hours.*

F331.—French Literature of the Nineteenth Century. Elective for Juniors and Seniors. The course includes a study of the romantic movement with emphasis on lyric poetry and drama and of the realistic movement with emphasis on the novel. Lectures, discussions, readings, and reports. Conducted in French. Prerequisite: F211-212. *Three semester hours.*

F332.—French Literature of the Twentieth Century. Elective for Juniors and Seniors. The course includes a study of the novel, drama, and lyric poetry of the contemporary period. Lectures, discussions, readings, and reports. Conducted in French. Prerequisite: F211-212. *Three semester hours.*

F342.—French Literature of the Middel Ages and the Renaissance. This course includes a study of the *chanson de geste*, the courtly novel, the religious and secular theater, poetry and prose masterpieces of the Renaissance. Lectures, discussions, readings and reports. Conducted in French. Prerequisite: F211-212. *Three semester hours.*

F422.—French Civilization. Elective for Juniors and Seniors. The course includes the necessary background in history, geography, social institutions, and culture for the advanced student of French. Conducted in French. Prerequisite: F131-132. *Three semester hours.*

F424.—Spoken French. Elective for Seniors and required of majors in French. The course includes discussion and oral reports in French on topics

of cultural significance and general interest. Prerequisite: F311-312. *Three semester hours.*

F510.—Seminar in French. Special topics in literary research. *Three semester hours.*

GERMAN

GR111-112.—Elementary German. Elective for Freshmen. The course aims to develop aural and oral skill by constant practice in the use of all language and covers the elements of grammar and pronunciation. Readings in German. Language laboratory. *Three semester hours per semester.*

GR121-122.—Intermediate German. Elective for Freshmen and Sophomores. The course includes constant practice in hearing and speaking German, a review of grammar, written summaries of readings, and simple original compositions in German. Language laboratory. Prerequisite: Two years of high school German or Gr111-112. *Three semester hours per semester.*

GR131-132.—Advanced German. Elective for Freshmen and Sophomores. The course includes constant aural and oral practice; correction of individual pronunciation difficulties; intensive readings in German literature; supplementary readings with written summaries in German. Language laboratory. Prerequisite: Three or more years of high school German or G121-122. *Three semester hours per semester.*

GR211-212.—Survey of German Literature. Representative readings in German literature from the Middle Ages until the present. Lectures, discussions, readings and reports. Conducted in German. Prerequisite: GR131-132. *Three semester hours per semester.*

GR311-312.—German Composition and Conversation. Advanced exercises in written and spoken German. Translation of literary passages to and from German. Original compositions and oral reports. Prerequisite: Gr131-132. *Three semester hours per semester.*

RUSSIAN

R111-112.—Elementary Russian. Elective for Freshmen. The course aims to develop aural and oral skill by constant practice in the use of the language and covers the elements of Russian grammar and pronunciation. Readings in Russian. Language laboratory. *Three semester hours per semester.*

R121-122.—Intermediate Russian. Elective for Freshmen and Sophomores. The course includes constant practice in hearing and speaking Russian, a review of grammar, written summaries of readings, and simple original compositions. Language laboratory. Prerequisite: Two years of high school Russian or R111-112. *Three semester hours per semester.*

R131-132.—Advanced Russian. The course includes constant aural and oral practice; correction of individual pronunciation difficulties; intensive readings in Russian literature; supplementary readings with written summaries in Russian. Language laboratory. Prerequisite: Three or more years of high school Russian or R121-122. *Three semester hours per semester.*

SPANISH

Sp111-112.—Elementary Spanish. Elective for Freshmen. The course aims to develop aural and oral skill by constant practice in the use of the language and covers the elements of Spanish grammar and pronunciation. Readings in Spanish. Language laboratory. *Three semester hours per semester.*

Sp121-122.—Intermediate Spanish. Elective for Freshmen and Sophomores. The course includes constant practice in hearing and speaking Spanish, a review of grammar, written summaries of readings, and simple original compositions. Language laboratory. Prerequisite: Two years of high school Spanish or Sp111-112. *Three semester hours per semester.*

Sp131-132.—Advanced Spanish. Elective for Freshmen and Sophomores. The course includes constant aural and oral practice, the correction of individual pronunciation difficulties, intensive readings in Spanish literature, supplementary readings and written summaries in Spanish. Language laboratory. Prerequisite: Three or more years of high school Spanish or Sp121-122. *Three semester hours per semester.*

Sp142.—Development of Reading Skills in Spanish. This course aims at the development of reading ability through the study of Spanish construction and idioms, identification of tense and verb forms, and building of vocabulary. Reading in prose and poetry, discussions, research. Conducted in Spanish. *Three semester hours.*

Sp211-212.—Survey of Spanish Literature. Elective for Sophomores and required of majors in Spanish. Representative readings in Spanish literature from the Middle Ages to the present. Lectures, discussions, readings, and reports. Conducted in Spanish. Prerequisite: Sp131-132. *Three semester hours per semester.*

Sp311-312.—Spanish Composition and Conversation. Elective for Juniors and required of majors in Spanish. Advanced exercises in written and spoken Spanish. Translation of literary passages to and from Spanish. Original compositions and oral reports. Prerequisite: Sp131-132. *Three semester hours per semester.*

Sp314.—Applied Linguistics: Spanish. This course includes linguistic analysis of Spanish phonology, morphology, and syntax and a systematic comparison of the structure of Spanish and English. Prerequisite: Sp311-312. *Three semester hours.*

Sp321.—Spanish Drama of the Golden Age. Elective for Juniors and Seniors. Study of the precursors as well as the principal authors of the Spanish Golden Age drama. Lectures, discussions, readings, and reports. Conducted in Spanish. Prerequisite: Sp211-212. *Three semester hours.*

Sp322.—Spanish Prose of the Golden Age. Elective for Juniors and Seniors. Study of the short story and novel with special emphasis on the *Quijote*. Lectures, discussions, readings, and reports. Conducted in Spanish. Prerequisite: Sp211-212. *Three semester hours.*

Sp331.—Spanish Literature of the Nineteenth Century. Elective for Juniors and Seniors. Study of the Romantic Movement and the beginning of the Realist Movement. Lectures, readings, discussions, and reports. Conducted in Spanish. Prerequisite: Sp211-212. *Three semester hours.*

Sp332.—Spanish Literature of the Twentieth Century. Elective for Juniors and Seniors. The novel, drama, and lyric poetry from 1898 to the present. Lectures, readings, discussions, and reports. Conducted in Spanish. Prerequisite: Sp211-212. *Three semester hours.*

Sp342.—Spanish-American Literature. This course includes representative readings in Spanish-American literature from the colonial days to the present. Lectures, discussions, readings, and reports. Conducted in Spanish. Prerequisite: Sp211-212. *Three semester hours.*

Sp422.—Hispanic Civilization. Elective for Juniors and Seniors. The course includes the necessary background in history, geography, social institutions, and culture for the advanced student of Spanish. Conducted in Spanish. Prerequisite: Sp131-132. *Three semester hours.*

Sp423.—Spanish-American Civilization. This course includes the necessary background in history, geography, social institutions, and culture to give the advanced student of Spanish a good knowledge of the development of the Spanish-American republics and their present status. Conducted in Spanish. Prerequisite: Sp131-132. *Three semester hours.*

Sp424.—Spoken Spanish. Elective for Seniors and required of majors in Spanish. The course includes discussion and oral reports in Spanish on topics of cultural significance and general interest. Prerequisite: Sp311-312. *Three semester hours.*

Sp510.—Seminar in Spanish. Special topics in literary research. *Three semester hours.*

GEOGRAPHY

James P. Jones, Chairman

The discipline of geography is an academic construct to bridge the natural sciences and social sciences. The causal development of the physical environment and area distribution of climate, vegetation, land forms, and

natural resources is correlated with the cultural features of the landscape as instituted by man. Thus, the interrelationships that exist between man and his environment are the basic understandings which result from a study of geography.

Geography majors are required to fulfill the following minimum requirements: GL101 Physical Geology, GL102 Historical Geology, G301 Principles of Physical Geography, G302 Principles of Human Geography and G404 Seminar, Problems in Geography Seminar plus three additional courses in geography selected from the department offerings. Course elections will be made with the guidance of the department chairman.

A minor in geography necessitates completion of the following courses: GL101 Physical Geology, G301 Principles of Physical Geography, G302 Principles of Human Geography, G404 Seminar, Problems in Regional Geography, plus two additional courses in geography selected from the department offerings. Course election will be made with the guidance of the department chairman.

An adequate academic background for the teaching of earth science courses may be obtained by supplementing the required courses in the natural sciences with the following electives: GL101-Physical Geology, GL102-Historical Geology, GL201-Oceanography, G301-Principles of Physical Geography, and G406-Weather and Climate.

G301.—Principles of Physical Geography. Required of Juniors in Elementary and Kindergarten-Primary Education. Also required of History majors in secondary education. The purpose of this course is to develop an awareness, understanding and appreciation of the elements of man's natural environment. The study includes such physical factors as location, weather and climate, ocean currents, land forms, and natural resources of the earth. The utilization of the tools of geography will be stressed throughout the course. *Three semester hours.*

G302.—Principles of Human Geography. Required of Juniors in Elementary and Kindergarten-Primary programs. Also required of History majors in secondary education. The purpose of this course is to develop an understanding of the relationship that exists between the natural and the cultural environment and the resultant effect upon man's activities. The study includes such cultural elements as population distribution, occupational activities, natural resource utilization and man's extra-territorial relations. *Three semester hours.*

G303.—Regional Geography of Anglo-America. This course is a regional study of the physical, cultural, political, and economic environment of the peoples of Anglo-America. The study will stress relationships that exist between these regions and other important world areas. *Three semester hours.*

G304.—Regional Geography of Latin America. A regional study of Middle America and South America. Emphasis is upon the physical environment and the cultural, economic, and political conditions that exist and are in the process of development. The study will stress the relationship that exist between regional Latin America and other regions of the world. *Three semester hours.*

G305.—Regional Geography of Europe. The physical, cultural, political, and economic features of the European subcontinent are described in the first part of this course. Regional similarities and differences and Europe's place in the modern world will be analyzed in the latter part. *Three semester hours.*

G309.—Biogeography. The geography of life and survival: a study of the biosphere. An ecological perspective of the environmental relationships of living organisms: their origin, distribution, evolution, adaptation and association. Emphasis upon the cause-effect interrelationships and problems of man in conflict with nature in the modern era: human implications of environmental contamination and population explosion. The geographic determinants in control of biological evolution. A study of the web of life, stressing human ecology and the conservation of natural resources. *Three semester hours.*

G310.—Geography of Underdeveloped Nations. This course will classify and evaluate the physical and cultural resource potential of the world's underdeveloped nations. Pertinent socio-economic, political and stability of the nation will be stressed. Independent research will be required. *Three semester hours.*

G401.—Political Geography. Emphasis is upon the influence of the geographical factors—physical and cultural—upon the development of states and their external relations. The geographic basis of power, internal and international tensions, and major writing in the field will be considered. Three hours a week. *Three semester hours.*

G402.—World Economic Geography. This course explores the relationships that exist between the physical environment and human activities. The geography of commerce, industry, agriculture, natural resources, and conservation will be presented by utilizing selected regions for study. *Three semester hours.*

G403.—Urban Geography. This course is a study of the influence of geographic factors of urban areas, and distribution of economic activities within the urban complex. Problems of suburban growth and development, metropolitan problems and planning will also be discussed. *Three semester hours.*

G404.—Problems in Geography-Seminar. This course will stress the classification and evaluation of resource potentials and the analysis of pertinent economic, political, and geographic problems. Emphasis will be placed upon underdeveloped nations and current regional problems. *Three semester hours.*

G405.—Cartography. The art and science of the presentation of earth patterns in the mediums of maps, models, cartograms and other cartographic devices. Laboratory exercises introducing basic projections, symbolism, handling of cartographic tools, lettering techniques, and fine drawing. A concise history of maps and a development of appreciation of the skills in planning, designing and construction of maps. *Three semester hours.*

G406.—Weather and Climate. The elements of weather, temperature, pressure, and moisture will be studied in detail. Correct usage of weather equipment is involved in the course. After the study of weather, the knowledge is applied to climates of the world. *Three semester hours.*

G490.—Special Topics in Geography. This course is structured so that the topics covered will be chosen as case studies to utilize the capabilities and interests in geographical areas of both students and the faculty member. Papers pertaining to the student's area of interest but revolving around the study area will be required. Admission at the discretion of the Chairman. *Three semester hours.*

G532.—Principles of Economic Geography. Required as a minor of graduate students majoring in history and planning to teach in secondary schools and elective for other graduate students preparing to teach in secondary schools. This course considers the principles of human geography as a basis for the study of the political and economic geography of the United States and selected regions of the world. Four hours a week for one quarter. *Two semester hours.*

GEOLOGY

GL101.—Physical Geology. This course will cover the physical aspects of geology. The origin of our landforms, weathering processes, agents of erosion and deposition, the different types of rocks, and the most common minerals will be covered. Topographic maps and geologic maps will be used extensively. *Three semester hours.*

GL102.—Historical Geology. In this study of historical geology, the major geological periods will be covered in detail. Emphasis will be placed upon North American phyla. Various theories concerning evolution, the origin of man, and an introduction to appropriate fossils will be highlights of the course. *Three semester hours.*

GL201.—Oceanography I. Oceanography is a correlation of the geographical, geological, physical, chemical, and biological aspects of the sea. Oceanography I explores the historical, geological, and physical aspects. Oceanography is traced from its earliest beginnings to the present status it enjoys today. The origins of the sea, submarine landforms, shoreline features and the geological processes which shaped them, sedimentation, the composition of sea water, sea water in motion, the heating and cooling of the seas are a few of the topics to be discussed. *Three semester hours.*

GL202.—Oceanography II. The biological, geographical, and recreational aspects of the sea will be explored. The fertile areas of the sea, favorable conditions for life in the sea, plankton, invertebrate life, life on the bottom, fishes, mammals, the economic importance of the fishing industry to Massachusetts, the recreational facilities, and the future uses of the sea will be discussed. *Three semester hours.*

HISTORY

Dr. Lauréat Bernard, Chairman

The department of History offers programs of major concentration for Secondary Education and for the A.B. and B.S. degrees in History. History majors, candidates for the B.S. and the B.S. in Education, must elect G301—Physical Geography and G302 Human Geography; candidates for the A.B. and A.B. in Education must elect the introductory courses in Economics (Ec101 and Ec102). The major in history is required to complete the following minimum courses before graduation: H208, H301, H302, H304, and H407 or H408. All majors are to achieve a balance between American and European courses. All major programs should be planned in consultation with the Department Chairman and his program assistants.

Minor programs are offered to all degree candidates. A minor in history must complete H208, H301, and H407 or H408 before graduation. Minor candidates should spread their electives as broadly as possible within their range of choice.

H101.—Western Civilization I. Required of Freshmen. After a brief introduction to the Graeco-Roman Heritage, a more intensive survey of Western Culture will commence with the fall of Rome. Special emphasis will be placed upon the cultural, economic, and political forces in the early growth of our civilization during the Middle Ages, the Renaissance and Reformation, and the rise of the National States. This course will terminate at 1715. Three hours a week. *Three semester hours.*

H102.—Western Civilization II. Required of Freshmen. This course will stress the following major movements of the modern age: the enlightenment, the causes and course of the French Revolution, the "old" and "new" imperialism, the Age of Reaction, the industrial revolution, the ideological forces of the nineteenth and twentieth centuries, and the impact they made on Western Culture. Three hours a week. *Three semester hours.*

H201.—American History to 1877. Required of Sophomores. This course is an interpretation of American History from 1763 to 1877, and an analysis of American political customs and institutions with emphasis on the Federal and Massachusetts constitutions. Three hours a week. *Three semester hours.*

H202.—American History from 1877. Required of Sophomores. A study of political, economic, and social changes from 1877 to the present with

special attention given to the rise of the United States as a world power. Three hours a week. *Three semester hours.*

H203.—History of England to 1689. Elective for Sophomores, Juniors, and Seniors. Prerequisite: H101 and H102. A survey in English history from the Roman occupation to the Glorious Revolution of 1689. Special emphasis will be placed on the fusion of Saxon and Norman cultures, the growth of common law, the effects of the Reformation and the emergence of Parliament. Three hours a week. *Three semester hours.*

H204.—History of England from 1689. Elective for Sophomores, Juniors, and Seniors. Prerequisite: H101 and H102. A continuation of H203. This course will stress the evolution of the British system of Cabinet government, the rise of the British Empire, the influence of English thought on America, and the rise of Great Britain as a modern state. Three hours a week. *Three semester hours.*

H205.—History of Latin America to 1825. Elective for Sophomores, Juniors, and Seniors. Prerequisites: H101 and H102. A study of the aboriginal American, the Spanish background, conquest and policies of the Crown and Church in the Colonial era, with emphasis on the social and intellectual development of Latin America to 1825. Three hours a week. *Three semester hours.*

H206.—History of Latin America Since 1825. Elective for Sophomores, Juniors, and Seniors. Prerequisites: H101 and H102. A study of the emerging nations of Latin America after independence, the growth of dictatorship, the social and intellectual changes and the political developments which shaped present-day Latin America. Three hours a week. *Three semester hours.*

H207.—American Colonial History. Elective for Sophomores, Juniors, and Seniors. A study of the interrelationships between Europe and British North America from Columbus to 1763, plus the development of American institutions. Three hours a week. *Three semester hours.*

H208.—American Revolution and Constitution. Elective for Sophomores, Juniors, and Seniors. Prerequisite: H201. A continuation of American Colonial history, studying the achievement of independence and creation of stable government in the United States from 1763 to 1800. Three hours a week. *Three semester hours.*

H210.—The Renaissance and the Reformation. Elective for Sophomores, Juniors, and Seniors. Prerequisite: H101. This course will first discuss the causes of the Renaissance, its political background, its literary, artistic, and scientific phases; then there will be an examination of the Reformation taking into account the religious changes in various countries, the counter changes of Catholicism, and the heritage of the Reformation. Three hours a week. *Three semester hours.*

H211.—The Eighteenth Century. Elective for Sophomores, Juniors, and Seniors. Prerequisite: H102. Following an introduction to the main force of

the Ancient Regime, the following will be discussed: The commercial-agricultural-industrial revolutions; England, France, and Spain as major powers; the growth of the empires of Austria, Prussia, and Russia; the international crises of the Eighteenth Century. Emphasis upon the Culture of the period. Three hours a week. *Three semester hours.*

H212.—The French Revolution and Napoleon. Elective for Sophomores, Juniors, and Seniors. Prerequisite: H102. An intensive analysis of the principles of the French Revolution, its causes, the periods of the National and Legislative Assemblies, the First Republic, the Terror and Directory, and the Napoleonic era. Emphasis upon the legacies transmitted. Three hours a week. *Three semester hours.*

H213.—The Seventeenth Century. Elective for Sophomores, Juniors, and Seniors. Prerequisite: H101. This Course will analyze, in depth, the decline of Spain, the rise of the Dutch State, the Thirty Years' War, the Age of Absolutism in France, the development of early constitutional England, and the achievements of the Century of Genius. Particular stress to be given to the cultural and intellectual advances under Louis XIV. Three hours a week. *Three semester hours.*

H214.—History of Modern Germany. Elective for Sophomores, Juniors, and Seniors. Prerequisite: H102. After a brief analysis of the background of modern Germany, emphasizing the development of nationalism and liberalism, this course will cover the unification and development of the German Empire under Bismarck, its subsequent defeat and fall in World War I, the Weimar Republic, the rise and fall of the Third Reich, and the rehabilitation and continued division of Germany in the post-war world. Three hours a week. *Three semester hours.*

H215.—The Early Middle Ages. Elective for second semester Freshmen, Sophomores, Juniors, and Seniors. Prerequisite: H101. A study of European Civilization from the Third Century to the Eleventh. Stress on the roots of Medievalism, the Germanic Kingdoms in the West, the Byzantine and Arab Empires, the rise and fall of the Carolingian Empire, Anglo-Saxon England, manorialism, and Feudalism. Special attention given to the growth of Christianity. Three hours a week. *Three semester hours.*

H216.—The High Middle Ages. An elective for second semester Freshmen, Sophomores, Juniors, and Seniors. The canvas of European Civilization from the Eleventh through the Fifteenth Centuries. Emphasis upon the religious revival and reform movement, the "Renaissance" of the Twelfth Century, the Crusades, the rise of secular states, the forces upholding the "greatness" of the Thirteenth Century, the decline of Medievalism. Final stress to be upon the Hundred Years' War. Three hours a week. *Three semester hours.*

H217.—France Since 1815. An elective for Sophomores, Juniors, and Seniors. Prerequisite: H102. A thorough going historical analysis and interpretation of post-Napoleonic France with emphasis placed upon the regimes of the Bourbon Restoration, July Monarchy, Second Empire, and

Third Republic. 1870-1940. The course will attempt to place the traditional problems of French Nineteenth- and Twentieth-Century history within the context of Modern European History. Three hours a week. *Three semester hours.*

H218.—History of Eastern Europe: 1815-1939. An elective for Sophomores, Juniors, and Seniors. Prerequisite: H102. This course will be devoted to the political and socio-economic history of the Austro-Hungarian Empire and of the Balkans from the Napoleonic Era to the outbreak of the Second World War. Particular emphasis will be placed upon the rise of European nationalism in the Balkan prior to 1914; and the application of self-determination to independent Eastern Europe. 1919-1939. Three hours a week. *Three semester hours.*

H301.—Europe in the Nineteenth Century. An elective for Sophomores, Juniors, and Seniors. Prerequisite: H102. After an introduction to the main forces underlying this century, the various national histories will be discussed. Special attention to be given to economic, social, and cultural factors. Three hours a week. *Three semester hours.*

H302.—Europe in the Twentieth Century. An elective for Sophomores, Juniors, and Seniors. Prerequisite: H102. A study of the political, social, economic, and cultural aspects of life in Europe in the Twentieth Century. The causes, course, and results of the two World Wars, Fascist Spain, Italian and Nazi Fascism, revolutionary Russia, and the Atlantic democracies will be stressed. Three hours a week. *Three semester hours.*

H303.—Populism and the Progressive Era. An elective for Juniors and Seniors. An intensive study of the American Commonwealth from 1877 to 1920. Emphasis upon the Gilded Age, the agricultural dissent and the Populist Movement, the Emergence of the Progressivism of Roosevelt-Taft-Wilson Period. Course will include a study of the United States in World War I and Versailles. Three hours a week. *Three semester hours.*

H304.—United States in the Twentieth Century. Elective for Juniors and Seniors. A study of the major political, social, and economic developments in America from 1920 to the Present. Among the topics which will be considered are: the Prosperous Twenties; the Great Depression; the New Deal; American participation in World War II; domestic affairs under the Truman, Eisenhower, Kennedy, and Johnson Administrations. A special emphasis upon the historical tendencies of Modern America. Three hours a week. *Three semester hours.*

H305.—History of Early Russia. An elective for Juniors, and Seniors. Prerequisite: H102. A study of Russian history with particular stress on the Kievan Period, the Mongolian Occupation, the Appanage Age, the Muscovite Regime, and the rise of the Romanov and Imperial Czars. Cultural and political, as well as economic, social, and religious developments to be emphasized. Three hours a week. *Three semester hours.*

H306.—History of Modern Russia. Elective for Juniors, and Seniors. Prerequisite: H301 or History of Ancient Russia. An intensive study will be made of the rise of Russia as a world power from the time of Nicholas I to the present. Cultural, intellectual, and economic changes will be emphasized and life in the Soviet Union will be examined. Three hours a week. *Three semester hours.*

H307.—History of Greece. Elective for Freshmen, Sophomores, and Juniors. This course covers the history of Greece from the twelfth century B.C. to the Roman occupation. Three hours a week. *Three semester hours.*

H308.—History of Rome. An elective for Freshmen, Sophomores, and Juniors. This course covers the history of Rome from the 5th century B.C. to its fall in A.D. 476. Three hours a week. *Three semester hours.*

H309.—Nationalism and Sectionalism in America: 1880-1850. Elective for Juniors and Seniors. Prerequisite: H201. An examination of the significant trends facing the young Republic, with emphasis on the domestic scene. Included will be a contrast of the national and sectional impulses illustrated by such subjects as Marshall's court, Jacksonian democracy, physical expansion, and economic development. Three hours a week. *Three semester hours.*

H310.—Civil War and Reconstruction: 1848-1877. Elective for Juniors and Seniors. Prerequisite: H201. A review of the great internal upheaval in midcentury America. Among the topics under examination will be the growth of sectional hostility, the rise of the Republican Party, constitutional crisis and secession, the demands of war, and the subsequent problems of peace. Three hours a week. *Three semester hours.*

H312.—The Westward Movement: 1763-1890. Elective for Juniors and Seniors. Prerequisite: H201. A history of the growth and development of the west, and the influence of the frontier on the political, cultural, and the economic life of America. The various frontiers and Turner's thesis will be discussed. Three hours a week. *Three semester hours.*

H315.—Africa: Imperialism and the Twentieth Century. Elective for Juniors and Seniors. A survey of the motives and methods of European imperialism in Africa during the late Nineteenth Century and the early Twentieth Century. The second half of the course will emphasize the development of African Nationalism and the struggle for independence to the present, as well as possible prospects for the emerging African states. Three hours a week. *Three semester hours.*

H316.—History of the New South. An elective for Juniors and Seniors. Prerequisite: H202. This course will analyze the "peculiar" nature of Southern society, problems, and institutions, and cover its history from Reconstruction to the present, stressing the factors promoting and retarding Southern reintegration into American Society. Three hours a week. *Three semester hours.*

H317.—History of Canada. An elective for Juniors and Seniors. A study of the political, social, economic, and cultural factors from early French and Colonial settlements to the present. Special emphasis upon the inter-relationships between Canada and the United States since 1776, Canada's growth since 1867, and its Commonwealth development. Three hours a week. *Three semester hours.*

H405.—Social and Cultural History of the United States I. to 1870. An elective for Juniors and Seniors. Prerequisite: H201 and H202. A study of the development of American social institutions with particular emphasis on the impact of Puritanism, the Enlightenment, Individualism, and Transcendentalism on the American scene. Three hours a week. *Three semester hours.*

H406.—Social and Cultural History of the United States II. 1870 to the Present. An elective for Juniors and Seniors. Prerequisite: H201 and H202. A study of the transition of the United States from a rural, agrarian society to an urban industrialized society and its impact on the social, cultural, and intellectual life of the people. Three hours a week. *Three semester hours.*

H407.—The Contemporary Far East. Elective for Juniors and Seniors. This course will focus on the transformation of China and Japan into modern nations in the nineteenth and twentieth centuries and their impact as new powers factors. Korea and other Southeast Asian areas will be treated. Three hours a week. *Three semester hours.*

H408.—Early East Asian Civilization. Elective for Juniors and Seniors. This course will probe into the social, cultural, political, and economic institutions of traditional China and Japan—and also their impact on the neighboring areas of Korea and Southeast Asia. Three hours a week. *Three semester hours.*

H410.—History of Contemporary Europe: 1939 to the Present. Elective for Seniors only. The political, diplomatic, military, social, and economic developments in both Western and Eastern Europe since 1939. Special attention to be given to the "social revolution" in Western Europe, the "economic revolution" of the Heartland, and significant cultural trends. Three hours a week. *Three semester hours.*

H411.—Seminar in American History I. Elective for history majors with the *permission of the Department Chairman*. Limited enrollment. After an introduction to the historiography of the Early American Period, the participants will present critical papers on the intellectual, political, and cultural areas of their choice. Directed reading and discussion. Three hours a week. *Three semester hours.*

H412.—Seminar in American History II. Elective for history majors with the *permission of the Department Chairman*. Limited enrollment. A review of the national-historical realia of the Post-Reconstruction Era up to World War II will be followed by pertinent topics being elaborated, by the

class participants, for study, class presentation, and evaluation. Three hours a week. *Three semester hours.*

H413.—Seminar in Modern European Thought I. Elective for history majors with *permission of the Department Chairman*. Limited enrollment. Studies entering into the socio-cultural problems of historical import in Europe from the Renaissance to 1870. Directed reading, analyzes, and presentation of papers. Three hours a week. *Three semester hours.*

H414.—Seminar in Modern European Thought II. Elective for history majors with *permission of the Department Chairman*. Limited enrollment. Probes into the seminal problems of modern European civilization (1870 to the Present). Directed research, group discussion, and class criticisms. Three hours a week. *Three semester hours.*

H490.—Seminar in Selected Topics. Required of all honors' candidates during the second semester of the Junior year. Opened to others with permission of Department Chairman. This course deals with the writing of history and methods of historical research. Three hours a week. *Three semester hours.*

H501.—Diplomatic History of the United States I. Required of graduate students majoring in history. Undergraduates admitted with permission of the Department Chairman. A study of the main forces that have shaped the early development of American foreign policy from 1777 to 1898. Three hours a week. *Three semester hours.*

H502.—Diplomatic History of the United States II. Required of graduate students majoring in History. Opened only to those who took H501 in the undergraduate division (these will receive three semester hours credit and attend classes throughout the fourth quarter). A study of American foreign relations during the Twentieth Century. Graduates will cover the period 1898-1945. Four hours a week, third quarter. *Two or three semester hours.*

H531.—History of England from 1485. Required of graduate students majoring in English. A survey course in English History starting with the Tudor Renaissance. Special emphasis will be placed on English political and social history as it applied to English literature. Four hours a week, third quarter. *Two semester hours.*

MATHEMATICS

Dr. William E. Perrault, Chairman

The Department of Mathematics offers programs of study leading to the degrees A.B., B.S., A.B. in Secondary Education, B.S. in Secondary Education, and M.Ed. The training offered contributes to the preparation of students for a wide variety of careers including the profession of secondary-school mathematics teaching, actuarial mathematics, creative scientific research and industrial technology.

The Major in Mathematics: To be accepted for concentration in mathematics, a student after having completed Mathematics 107, 108, 207, and 311 (and M208 and M406 for B.S. in mathematics candidates and A.B. in Ed. candidates satisfying the language requirement at the end of the Freshman year) must have his program for his Junior and Senior years approved at the end of his Sophomore year by the Mathematics Department. No student with a grade of less than 2 in M207 or M311 may concentrate in mathematics. Prospective actuarial candidates for the life insurance industry are advised to take the following courses: M304, M403, M402, M404 and M405.

For detailed information on course sequences for the mathematics major and related minor for the various degrees, consult the Mathematics Department Chairman.

Minors in mathematics shall complete at least 18 semester hours in mathematics which must include M107, M108, M207, and M208.

Prospective elementary school teachers who have completed four years of college preparatory mathematics in high school may satisfy the Level II requirements proposed by the Committee on the Undergraduate Program in Mathematics (CUPM) by taking the following courses: M107, M108, M207, M306, M307, M311, M408.

M101.—Fundamental Principles of Mathematics I. Required of Freshmen in the A.B. program who are not majors in mathematics or science. Prerequisite: none. The course shows what mathematics is, its range, development, and approach to real problems with emphasis placed upon the fundamental concepts and applications of mathematics rather than its formal techniques. Topics included are: a historical development, mathematical reasoning, numbers, algebra, Euclidean, projective and coordinate geometry and applications to science. Three hours a week. *Three semester hours.*

M102.—Fundamental Principles of Mathematics II. Elective for Freshmen. Prerequisite: none. The course includes an introduction to sets, logic, number systems, relations and functions, sequences and limits, and elementary calculus. Three hours a week. *Three semester hours.*

M103.—An Introduction to Modern Mathematics I. Elective for Freshmen who have not had four years of high school mathematics. The course stresses the nature of mathematics as a logical system and a modern, unified treatment of algebra, trigonometry, analytic geometry. Topics included are sets, algebra, inequalities, functions and determinants. Three hours a week. *Three semester hours.*

M104.—An Introduction to Modern Mathematics II. Elective for Freshmen. Prerequisite: M103. The course includes functions, limits, continuity, derivatives, application, conic sections, and a study of introduction to probability. Three hours a week. *Three semester hours.*

M107.—Calculus Ia. Elective for Freshmen who have had four years of high school mathematics and for Sophomores who have passed M104. The

course includes the rate of change of a function, derivatives of algebraic functions, applications of the derivatives and integration. Four hours a week. *Four semester hours.*

M108.—Calculus Ib. Elective for Freshmen and Sophomores. Prerequisite: M107. The course includes application of the definite integral, transcendental functions, methods of integration, determinants and linear equations. Four hours a week. *Four semester hours.*

M109.—Mathematical Analysis I. Elective for Freshmen in the Biological and Social Sciences. Prerequisite: None. The course serves as an introduction to the basic ideas of calculus and probability theory with emphasis on understanding mathematical concepts and applications of them. Topics included are sets, functions, finite sample spaces, statistical inference, limits, and derivatives. Three hours a week. *Three semester hours.*

M110.—Mathematical Analysis II. Elective for Freshmen. Prerequisite: M109. The course includes the definite integral, fundamental theorem of calculus, methods of integration, applications, flow diagrams and continuous and discrete probability. Three hours a week. *Three semester hours.*

M207.—Calculus IIa. Elective for Sophomores and Juniors. Prerequisite: M108. The course includes plane analytic geometry, hyperbolic functions, polar coordinates, vectors and parametric equations, and solid geometry and vectors. Four hours a week. *Four semester hours.*

M208.—Calculus IIb. Elective for Sophomores and Juniors. Prerequisite: M207. The course includes partial differentiation, multiple integrals, infinite series, and complex numbers and functions. Four hours a week. *Four semester hours.*

M224.—Structure of the Number System I. Elective for students in the Elementary Curricula. Prerequisite: None. The course is a study of the numbers used in elementary school: whole numbers, common fractions, decimal fractions, and irrational numbers. Emphasis is on the basic concepts and techniques and includes properties of addition, multiplication, inverses, systems of numeration, and the number line. The techniques for computation with numbers is considered from the properties and structure of the number system. Three hours a week. *Three semester hours.*

M225.—Structure of the Number System II. Elective for students in the Elementary Curricula. Prerequisite: M224. The course is a study of the numbers used in elementary number theory including prime numbers, properties of even and odd numbers, and some arithmetic with congruences. Three hours a week. *Three semester hours.*

M226.—Intuitive Geometry. Elective for students in the Elementary Curricula. The course is a study of space, plane, and line as sets of points, considering separation properties, and simple closed curves; the triangle, rectangle, circle, sphere, and the other figures in the plane and space considered as sets of points with their properties developed intuitively; concepts

of measurement in the plane and space, angle, measurement, measurement of the circle, volumes; of familiar solids; treatment of coordinate geometry through graphs of simple equations. Three hours a week. *Three semester hours.*

M227.—Elements of Algebra. Elective for students in the Elementary Curricula. Prerequisite: M225. The course is concerned with basic ideas and structure of algebra, including equations, inequalities, positive and negative numbers, absolute value, graphing of truth sets of equations and inequalities, examples of finite algebraic systems to emphasize the structure of algebra as well as simple concepts and language of sets. Three hours a week. *Three semester hours.*

M305.—Basic Modern Mathematics. Required of Juniors who elect Elementary and Kindergarten-Primary Curricula. Elective for Seniors in Secondary Curriculum who are not majoring in Mathematics or Science. The course presents the fundamental ideas and applications of mathematics. Topics included are numerals, number systems, sets, properties of operations, informal geometry, fractions, percent, open sentences and applied trigonometry. Three hours a week. *Three semester hours.*

M306.—Fundamental Concepts of Geometry I. Elective for Juniors. Prerequisite: M108. The course shows the historical evolution of our geometrical concepts, the relationship between Euclidean plane geometry and other geometries, the nature of proof, and the concept of a geometry as a logical system. Three hours a week. *Three semester hours.*

M307.—Probability. Elective for Juniors and Seniors. Prerequisite: M208. The course includes properties of the probability set function, conditional probability, independence, stochastic processes, distributions and expectations of random variables, and limiting distributions. Three hours a week. *Three semester hours.*

M308.—Fundamental Concepts of Geometry II. Elective for Juniors and Seniors. Prerequisite: M306. The course covers non-Euclidean geometries, the Erlanger Program, basic topological concepts, n -dimensional geometry, and abstract spaces. Three hours a week. *Three semester hours.*

M309.—History of Mathematics. Required of Juniors majoring in Mathematics in the Secondary Curriculum. The course surveys the history of elementary mathematics, through calculus, from ancient times to the present. Emphasis is on the major developments in the fields of arithmetic, algebra, and geometry, and on contributions of noteworthy mathematicians and epochs. An important part of the course is the significance of history in the teaching and learning of mathematics. Three hours a week. *Three semester hours.*

M310.—Introduction to Number Theory. Elective for Juniors and Seniors. Prerequisite: M108. The course includes elementary properties of integers, the Euclidean algorithm, divisibility, congruences and diophantine equations, and number-theoretic functions. Three hours a week. *Three semester hours.*

M311.—Set Theory and Logic. Elective for Sophomores and Juniors. Prerequisite: M108. The course includes symbolic logic, proofs, axiom systems, sets, cardinal and ordinal numbers, and induction. The real and complex numbers are developed and their properties considered. Three hours a week. *Three semester hours.*

M312.—Introduction to Numerical Analysis. Elective for Juniors and Seniors. Prerequisite: M208. The course includes multiplication and inversion of matrices. Solutions of systems of equations. Eigen values and vectors. Finite Differences. Interpolation and approximation. Numerical integration. Three hours a week. *Three semester hours.*

M316.—Methods of Teaching Mathematics in the Kindergarten-Primary School. Required of Juniors electing in the Kindergarten-Primary Curriculum. Prerequisite: M305. This course considers the methods and materials needed by teachers of arithmetic in Grades I through III. Two hours a week. *Two semester hours.*

M326.—Methods of Teaching Mathematics in the Elementary School. Required of Juniors electing the Elementary Curriculum. Prerequisite: M305. This course considers the methods and materials needed by teachers of arithmetic in Grades I through VIII inclusive. Two hours a week. *Two semester hours.*



M335.—Mathematics for Secondary School Teachers. Required of Juniors electing the Secondary Curriculum and majoring in mathematics or science. This course provides backgrounds for teaching both traditional and modern Mathematics. Special attention is given to number systems, basic concepts and applications of mathematical operations, definitions and properties of sets and various uses of the set concept. Three hours a week. *Three semester hours.*

M401.—Mathematical Discovery. Elective for Seniors electing the Secondary Curriculum. The course is concerned with problem solving from the heuristic point of view and analyzes generally the ways and means of discovery of problem solutions. The aim is an understanding of and improvement in problem solving and the means of teaching problem solving. Three hours a week. *Three semester hours.*

M402.—Mathematical Statistics I. Elective for Seniors. Prerequisite: M307. A broad introduction to classical large-sample methods. Topics covered are probability, frequency distributions, sampling theory, hypothesis testing and estimation, correlation and regression. Three hours a week. *Three semester hours.*

M403.—Mathematical Statistics II. Elective for Seniors. Prerequisite: M402. The course includes limiting distributions, small sample distributions, distribution-free statistical influence, statistical hypotheses, analysis of variance, and multi-variate distributions. Three hours a week. *Three semester hours.*

M404.—Mathematics of Finance. Elective for Seniors. The course considers the application of algebra to interest, annuities, bonds, investments and life insurance. Three hours a week. *Three semester hours.*

M405.—Mathematics of Life Insurance. Elective for Seniors. Prerequisite: M404. The course includes mathematical theory of life contingencies, mortality tables, annuities, net premiums, reserves, nonforfeiture benefits, and gross premiums. Three hours a week. *Three semester hours.*

M406.—Modern Algebra. Elective for Sophomores, Juniors and Seniors. Prerequisite: M407 or M408. The course is an introduction to the abstract thinking required in higher mathematics. Topics included are sets, relations, functions, groups, rings, integral domains, fields, and Boolean Algebra. Three hours a week. *Three semester hours.*

M407.—Linear Algebra. Elective for Sophomores and Juniors in the A.B. and B.S. programs. The course is concerned with an axiomatic approach of the blending algebraic and geometric concepts. The algebra of matrices and the geometry of linear transformations are developed simultaneously and applications of concrete ideas are provided. Topics included are abstract systems, vector spaces, linear transformations, and matrices. Three hours a week. *Three semester hours.*

M409.—Differential Equations. Elective for Juniors and Seniors. Pre-

requisite: M208. The course considers the theory and techniques of solving differential equations. Equations of the first order and first degree, linear differential equations, non-homogeneous equations, and special equations of order two are studied, together with their application to science. Three hours a week. *Three semester hours.*

M410.—Topology. Elective for Seniors. Prerequisite: M407. The course includes metric and general topologies, properties of topological spaces, topological vector spaces, normal linear spaces, Banach, Hilbert spaces, and function spaces. Three hours a week. *Three semester hours.*

M411.—Analysis. Elective for Seniors. Prerequisite: M208. The course includes fundamental motions of limits, continuity, differentiation and integration for functions of one or more variables, infinite series, improper integral, and applications. Three hours a week. *Three semester hours.*

M412.—Analysis II. Elective for Seniors. Prerequisite: M411. The course includes: Riemann and Lebesgue integrations, functions of bounded variations, multiple and iterated integrals, sequences and series of functions, uniform convergency and its consequences, Weierstrass, Picard, and Arzela theorems, and Fouier series. Three hours a week. *Three semester hours.*

M413.—Introduction to Mathematical Physics I. Electives for Juniors and Seniors. Prerequisite: M409. Vectors. Introduction to Tensors and applications to transformation of bases. Matrices. Jacobians of transformations. Vector and Scaler Fields. Gradient. Divergence. Rotational. Line, surface Functions. Some topics of Special Theory of Relativity: Lorentz's transformations. Three hours a week. *Three semester hours.*

M440.—Topics in Abstract Mathematics. Prerequisites: M208 and M311. Abstract topics of Analysis previously and concurrently taught are studied in this course as a foundation to advanced topics in Mathematical theories and for future Graduate work. Three hours a week. *Three semester hours.*

M441.—Topics in Applied Mathematics. Prerequisites: M208 and M311. This course brings previously and concurrently taught Mathematical theories into direct applications to Science, Industry and Business. The topics presented of applied fields are mathematically studied and analyzed. Three hours a week. *Three semester hours.*

M490.—Special Topics in Mathematics. Required for Seniors in the Honors Program at Boston State. Prerequisite: M440 or M441. This course is intended to provide a student in the Honors Program with the ability to do scientific Research in a particular chosen field of Mathematics, eventually leading the student to write a Thesis. Close supervision of the research is given; seminars at the end of the trimester are given by the students and faculty. Three hours a week. *Three semester hours.*

M501.—Fundamental Concepts of Geometry. Required of Graduate students preparing to teach mathematics in secondary schools. Content varies

from year to year, topics selected from showing the historical evolution of our geometrical concepts, the relationship between Euclidean plane geometry and other geometries, the nature of proof, the concept of a geometry as a logical system, the Erlanger Program, basic topological concepts, n-dimensional geometry, and abstract spaces. Three hours a week. *Three semester hours.*

M504.—Probability and Statistical Inference. Offered as a major or minor for graduate students. A broad introduction to classical large-sample methods. Topics covered are probability, frequency distributions, sampling theory, hypothesis testing and estimation, correlation and regression. The theory and method of teaching probability and statistics in the senior high school. Four hours a week, third quarter. *Two semester hours.*

M542.—A Survey of Algebra and Number Theory. Required of Graduate students preparing to teach mathematics in secondary schools. Emphasis will be placed on algebraic structures, nature of proof, formal properties and construction of number systems, and methods of presentation of these topics in a modern mathematics program. Four hours a week, third quarter. *Two semester hours.*

MUSIC

Elizabeth A. O'Brien, Chairman

The program in Music is offered to prepare men and women to teach music at all levels in the elementary schools, from kindergarten through Grade VI. Two courses are required: Ms201, and either Ms411 for those preparing to teach at the Kindergarten-Primary level, or Ms422 for those preparing to teach in the Elementary school.

The Department of Music offers a program of elective courses directed primarily to students who possess a special interest in the field of music. This program aims at developing a broad knowledge of music, its theory and techniques. It also aims at developing vocal skills. There are no prerequisites.

Ms101.—Music IA. Elective for Freshmen and Sophomores. This course includes: (1) a study of keys, signatures, scales, intervals, triads; (2) ear training; (3) rhythmic and melodie dictation; (4) sight singing; (5) voice training; (6) interpretation; (7) application of the voice to book materials. Three hours a week. *Three semester hours.*

Ms102.—Music IB. Elective for students who have passed Ms101. This course continues the work of Music IA and also includes the study of elementary harmony. Three hours a week. *Three semester hours.*

Ms201.—Appreciation of Music. Required of Sophomores. A general survey of the history and literature of music from the Middle Ages to the Contemporary period. Form, orchestration, and stylistic features are studied in relation to the historical and cultural background of the major works which are heard. Assigned reading. Three hours a week. *Three semester hours.*

Ms203.—Music IIA. Elective for Sophomores. Prerequisite: Ms102. This course continues the work of Ms101 and 102. It includes (1) voice and ear training; (2) sight singing; (3) more advanced dictation; (4) presentation and interpretation of part songs; (5) harmonic analysis (6) harmony; triads and their inversions, dominant seventh chords, the harmonization of melodies and figured basses. Three hours a week. *Three semester hours.*

Ms204.—Music IIB. Elective for Sophomores. Prerequisite: Ms203. This course develops further the work of Ms203 and also includes the study of the dominant seventh chord and its inversions, the chords of the seventh upon the leading tone, secondary seventh chords, and modulation. Three hours a week. *Three semester hours.*

Ms301.—Music IIIA. Elective for Juniors. Prerequisites: Ms203 and 204. This course includes (1) theory; (2) sight singing; (3) voice and ear training; (4) rhythmic and melodic dictation; (5) transposition; (6) presentation and interpretation of part songs; 7 harmonic analysis (8) harmony: modulation; irregular resolutions, and non-harmonic tones, and the harmonization of melodies and figured basses. Three hours a week. *Three semester hours.*

Ms302.—Music IIIB. Elective for Juniors. Prerequisite: Ms301. The course continues the work of Music IIIA and also includes the study of the chords of the dominant ninth, eleventh, and thirteenth, the Neapolitan sixth and the cords of the augmented sixth. Three hours a week. *Three semester hours.*

Ms333.—Masterpieces of Music. A study of some of the recognized musical masterworks from the Renaissance to the Modern Period will be achieved through listening to recordings and live performances. At least one example of each major form, such as, Mass, Ballet, Symphony, Concert Overture, will be heard. Prerequisite: Ms201. Three hours a week. *Three semester hours.*

Ms334.—Opera. This course will include a historical survey of opera from the time of the Camerata to the present; a study of the libretti and music of standard operatic literature with detailed study of certain masterworks. Prerequisite: Ms201. Three hours a week. *Three semester hours.*

Ms335.—American Music. This course will include the developments in the history of American Music from the time of the New England hymnodists to the composers of today. It will consider "serious" music and "popular" music, Jazz and show music. Emphasis will be placed upon the contemporary composers and their works. Prerequisite; Ms201. Three hours a week. *Three semester hours.*

Ms402.—Music IV. Elective for Seniors. Prerequisite: Ms301-302. The course includes (1) voice and ear training; (2) sight singing; (3) presentation and interpretation of part songs; (4) keyboard harmony; (5) written harmony—further use of harmonic material applied to the harmonization of folk songs; 6) harmonic analysis. Three hours a week. *Three semester hours.*

Ms411.—Music, Kindergarten-Primary. Required of Seniors who have elected the Kindergarten-Primary Curriculum. The course includes voice and ear training; a study of keys, signatures, scales, intervals, triads; sight singing; methods of teaching music in the kindergarten and primary grades; vocal problems of the child's voice; rote songs; piano playing; a study of materials suitable for use in these grades. Candidates must pass a satisfactory examination in piano playing. Three hours a week. *Three semester hours.*

Ms422.—Music, Elementary School. Required of Seniors who have elected the Elementary Curriculum. The course includes: (1) a study of keys, signatures, scales, intervals, triads, (2) voice and ear training; (3) sight singing; (4) interpretation; (5) methods of teaching music in the elementary grades; (6) study of materials suitable for use in these grades. Three hours a week. *Three semester hours.*

PHILOSOPHY

John J. O'Neill, Chairman

The Department of Philosophy offers both courses for liberal education and an elective sequence leading to a major or a minor in philosophy. Students who wish to concentrate in Philosophy should elect Ph101—Problems of Philosophy—in the Freshman year. Major or minor study requires Ph101 or Ph401 and Ph201, 202, 402.

Ph101.—Problems of Philosophy. Elective for Freshmen and Sophomores in non-teaching programs. An introductory course. The aim of this course is to acquaint the student with the philosophic method, the problems and issues of philosophy, and the great philosophers. Three hours a week. *Three semester hours.*

Ph102.—Philosophy of Man. Elective for Freshmen and Sophomores. Man is studied as a rational social being with supremacy of intellect and the anarchy of feeling. Modern images of man and the traditional great philosophies of life will be studied. Three hours a week. *Three semester hours.*

Ph201.—History of Philosophy I. Elective for Sophomores, Juniors, and Seniors. This course concentrates on selected philosophers from the Pre-Socratics through the Middle Ages. The main questions and answers of our philosophical heritage will be discussed in their cultural milieu indicating the timelessness of philosophical thought. Text readings and selected source readings and discussions will be included. Three hours a week. *Three semester hours.*

Ph202.—History of Philosophy II. Elective for Sophomores, Juniors, and Seniors. Prerequisite: 201: It begins with the Renaissance-Humanistic philosophers, continues with the scientific thinkers and the near modern philosophers. Three hours a week. *Three semester hours.*

Ph203.—Logic. Elective for Sophomores, Juniors, and Seniors. This course studies principles of Rhetoric and Logic. Rhetoric aims to discover and reduce to system the rules of persuasion. Logic aims to discover rules of right reasoning which guide the mind to think and reason correctly in its chief operations: Simple Apprehension, Judgment, Reasoning. Special attention is given to Fallacies, Deduction, Induction and Subjective Factors affecting thinking. Three hours a week. *Three semester hours.*

Ph301.—Ethics. Elective for Sophomores, Juniors, and Seniors. This course studies the historical development of ethics from the ancient Greek, Roman, and Medieval, to Modern periods including Positivism, Marxism, and Existentialism. Ethics will be studied in its historical and cultural perspectives. Special attention will be given to ethical theories and to the application of ethics for teaching, business, and communication. Three hours a week. *Three semester hours.*

Ph302.—Aesthetics. Elective for Sophomores, Juniors, and Seniors. Aesthetic experience will be studied, also the nature, purpose, and value of the various conceptions of art, leading to a deeper appreciation of its nature. Aesthetic standards, philosophies of art and the relation of aesthetic experience to life will be studied. Special attention will be given to the validity of the aesthetic judgment. Three hours a week. *Three semester hours.*

Ph303.—Social Philosophy. Elective for Sophomores, Juniors, and Seniors. Study of the different conceptions of man, of values, and of social processes, leading to a systematic philosophy of man and the state. Evaluation of fundamental theories. Three hours a week. *Three semester hours.*

Ph304.—American Philosophy. Elective for Sophomores, Juniors, and Seniors. Development of American philosophy through reading and discussion of representative selections. Emphasis is placed on Peirce, James, Royce, Whitehead, Santayano, Dewey. Three hours a week. *Three semester hours.*

Ph401.—General Philosophy. Required of Seniors not completing Ph101. The aim of this course is to acquaint the student with the philosophic method, the problems of philosophy, and the great philosophers. Attention will be given to discussion of problems and readings from classical and contemporary sources. Three hours a week. *Three semester hours.*

Ph402.—History of Contemporary Philosophy. Required of A.B. and B.S. Degree candidates. This course studies the main lines of modern thought: Logical Positivism, Existentialism, Neorealism, Dialectic Materialism, Pragmatism, Thomism, Transcendentalism, Contemporary and European thought will be studied in their historical and cultural perspectives. Special attention will be given to the twentieth century philosophers—the Age of Analysis. Three hours a week. (Ph401 or 101 Prerequisite). *Three semester hours.*

Ph404.—Seminar in Philosophy. Elective for Seniors in A.B. and B.S. Non-teaching Curriculum completing Ph401 or Ph101. One or two selected topics will be treated in depth. Topics will vary from semester to semester,

for example, Seminar in Theory of Value, Seminar in Plato, Seminar in Aristotle, Seminar in Existentialism. Three hours a week. *Three semester hours.*

Ph490.—Required for honors candidates. Second semester Juniors or first semester Seniors. The study area will be determined by the student in consultation with the department chairman and faculty member involved in directing the required honors paper. Subject area must be philosophical in nature. Individual work beyond regular class hours is required. Three hours a week. *Three semester hours credit.*

Ph531.—Philosophical Foundations of Education.—Part I. Required of graduate students. This course is an historical approach to the study of educational thought and includes an examination of primary educational concepts which have evolved through western thought to the present day. Selections from the great documents in educational thought are studied in relation to the historical period in which they were produced. The student is expected to read and analyze the original contributions of the major educational philosophers. Three hours a week. *Three semester hours.*

Ph532.—Philosophical Foundations of Education.—Part II. Required of graduate students. This course makes application of the philosophical bases of education to recurrent and contemporary educational issues and problems. Each topic is studied from the viewpoint of each of the major philosophical systems and the related educational concepts in order to determine to what extent a synthesis of viewpoint may be achieved. Four hours a week, one quarter. *Two semester hours.*

PHYSICAL EDUCATION

Men: James P. Sullivan, Chairman

Women: Marie I. Farrell, Chairman

The departments for men and women are separate. Offerings in general education include Health, Physical Education activities, and Aquatics. The department participates in the teacher training programs, offering PE301—Principles of Physical Education for kindergarten and elementary majors and FA301—First Aid for all teacher candidates. Elective work includes courses in recreational leadership, coaching and officiating, and outdoor education.

PE101-102M.—Freshman Year Activities. Required of all men students. This course is designed to improve or maintain the physical fitness of the students through vigorous exercise. Emphasis is placed on team games and activities with a "carry-over" value. Instruction is given in softball, tag football, basketball, track, volleyball, badminton, and golf. Two hours a week. *No credit.*

PE101-102W.—Freshman Physical Education. Required of all women students. A program of varied activities based on an elective system. Each

student must take one quarter each of: dance activity, a team sport, and an individual and/or dual sport. The fourth quarter may be in the area of her choice. Two hours a week. Two semesters—*no credit*.

PE103W.—Personal Skills in Individual and Team Sports. Required of students minoring in Physical Education. Emphasis is placed on the development of personal skills in selected activities. Four hours a week. *Three semester hours*.

PE104W.—Analysis of Motor Skills. Required of students wishing to minor in Physical Education. This course includes the theoretical and practical knowledges necessary for the understanding of human movement, and the techniques of analyzing motor skills. Prerequisite: H1 102W. Three hours a week. *Three semester hours*.

PE201M.—Aquatics. Required of all Sophomore men. Non-swimmers are taught the elementary strokes. Swimmers' techniques are improved, and their physical condition strengthened. Emphasis is placed on water safety. Two hours a week. *No credit*.

PE210W.—Aquatics. Required of all Sophomore women. A course concerned with the teaching of swimming and diving skills according to the standards established by the American National Red Cross. Two hours a week. *No credit*.

E203W.—Recreation and Leadership. Elective for women. A course designed to acquaint the students with the need for and the values of Recreation in our modern society. The course will equip students with methods and materials used in recreation leadership. Emphasis will be placed on planning the "balanced" recreation program. The course will also acquaint students with opportunities available in the field of recreation. A course especially designed for prospective playground leaders, recreation leaders, and camp counselors. Three hours a week. *Three semester hours*.

PE204W.—Organization and Administration of Community Recreation. Elective for women students who have passed PE203W. A course designed to acquaint the students with the historical, philosophical and theoretical background of recreation, play, and leisure. The course will also provide the students with an understanding of the organization and administration of community recreation. In addition, opportunities will be provided for leadership experiences and the planning of community recreation programs. *Three semester hours*.

PE205W.—Physical Education and Recreation for the Mentally Retarded. The purpose of this course is to provide the student with an opportunity to become acquainted with the philosophy, objectives and guiding principles in programming for mentally retarded children. Emphasis will be placed on characteristics for the retarded children, and the potentialities and limitations of the retarded in physical education and recreational activity. Three hours a week. *Three semester hours*.

PE301M.—Physical Education. Required of all Junior men who have elected the Elementary curriculum. This course will include a study of the aims and objectives of physical education at the elementary school level. The students will become acquainted with the methods and materials used in teaching physical education. Two hours a week. *One semester hour.*

PE301W.—Physical Education. Required of all Junior women who have elected the Elementary or Kindergarten curriculum. This course is designed to acquaint the student with the aims, objectives, and philosophy of physical education. Emphasis will be placed on the methods and materials used for effective teaching of physical education at the elementary level. An opportunity will be provided for students to gain practical experience in teaching physical education activities to children at the laboratory school. Two hours a week. *One semester hour.*

PE304W.—Principles and Philosophy of Physical Education. Physical education as a developmental experience plays an important role in the American cultural pattern. This course is designed to develop the students' awareness and understanding of the place of physical education in the modern world through the study of the following topics: program administration, curriculum designing, teaching principles, guidance and evaluation techniques, and source materials. Elective for women. Three hours a week. *Three semester hours.*

PE306W.—Current Problems in Health and Physical Education. Elective for Junior and Senior women. This course is built around topic areas such as: Special programs for the Atypical Child, Changing responsibilities for the teaching of health and physical education, Conducting workshops for classroom teachers, Conducting the intramural program, and Status of Research in Physical Education. There will be emphasis on readings from current literature. Three hours a week. *Three semester hours.*

PE410M.—Coaching the Major Sports. Elective for Junior and Senior men. This course is designed to prepare the student to coach athletic teams at the elementary and junior high school level. The rules, strategy, practice techniques, coaching psychology of football, baseball and basketball will be covered. Three hours a week. *Three semester hours.*

PE401W.—Coaching and Officiating. Elective for women. Prerequisite is approval for admission by the Department of Physical Education. This course is designed to acquaint students with the philosophy and standards of girl's and women's sports. The techniques of coaching and officiating of the major sports for women will be stressed. Opportunity will be provided for students to become rated officials upon passing the national and practical examinations. Three hours a week. *Three semester hours.*

PE403W.—Workshop in Outdoor Education. Elective for upperclass women. This course will stress the basic information fundamental to understanding the interrelationships that exist between the natural environment and man. The objectives of this course will be accomplished by classroom lectures, field trips, and camp experience. *Five semester hours.*

FIRST AID

FA302.—First Aid and Safety. Required of Juniors. This course fulfills the requirements of the Standard and Advanced Red Cross First Aid Courses. It also includes specific instructions for health and safety in the over-all school situation. Two hours a week. *One semester hour.*

HEALTH

H1102.—Foundations of Health. Required of Freshmen in Education curricula. The course emphasizes knowledge of the physiology of the body. Stress is placed on scientific information and the development of health practices which contribute to effective living. Two hours a week. *Two semester hours.*

H1103W.—Health Problems In The Classroom. This course will give the student a working knowledge of the health problems which are commonly found in the school-age child. Many health problems which adversely affect the child's educational experience are visible in the daily activities at school. The classroom teacher must be able to recognize these problems as they arise. In addition, the course will outline his role in dealing with these problems and will indicate other resources within the school and within the community which are available for the promotion of optimal physical health in the school-age child. Three hours a week. *Three semester hours.*

PHYSICS

Dr. Francis W. McCarthy, Chairman

The department offers majors in physics and natural sciences. A.B. and B.S. majors in physics are required to take the following courses: P101-102; P201-202; P204; P401-402; P409-410; P407-408. They must complete courses in Mathematics through Mathematical Physics and Chemistry 101-102. A.B. (with teacher preparation) and B.S. in Ed. majors in natural sciences are required to take Ch101-102; P201-202; P306; G1101; Bi201-202. A minor in Physics can be obtained by taking P101-102; P201 and two courses selected from any of the advanced courses in physics.

A minor in natural sciences can be obtained by taking Ch101-102; P201-202 or P301-302; and Bi201-202.

For those students who are interested in teaching physics, programs can be arranged by consultation with the department chairman.

PS101.—Physical Sciences I. This course is designed to acquaint the student with the contributions and the place of science in contemporary civilization. Specifically designed for the student who will not major in science, the course attempts to show what science is and what purports to do. In this

portion of the course, selected topics from physics are studied from the points of view of their historical origin, their development and the influences which they have had on modern society. Lectures, demonstrations, discussions and supplemental readings will be used. Three hours a week. *Three semester hours.*

PS102.—Physical Sciences II. A continuation of the course Physical Sciences I; in this part of the course selected topics from the fields of chemistry and astronomy are studied with the same points of view in mind as in the preceding course. Three hours a week. *Three semester hours.*

P101.—College Physics I. Required of all physics majors. Elective for those who have the prerequisite in Mathematics. An intensive study of Mechanics will be made. Kinematics and dynamics of point masses and rigid bodies will be studied. Mathematics 107 is a prerequisite or may be taken concurrently. Three lectures and two hours of laboratory per week. *Four semester hours.*

P102.—College Physics II. Required of all physics majors. Elective for those who have the prerequisite in Mathematics. An intensive study of Electricity and Magnetism will be made. Electric forces and fields, potential, dielectric theory, moving charges and fields will be studied. Mathematics 108 is a prerequisite or may be taken concurrently. Three lectures and two hours of laboratory per week. *Four semester hours.*

P201.—College Physics III. Required of all physics majors. Elective for those who have the prerequisite M108. Topics in quantum mechanics and relativity theory will be treated from the quantum approach. Three lectures and two hours of laboratory per week. *Four semester hours.*

P202.—Electromagnetic Theory. Required of all physics majors. Elective for those who have the prerequisite in Mathematics. Maxwell's equations will be developed in differential and integral form. The mathematics and physics of waves will be discussed and representative problems in physical optics will be solved. Special topics and applications such as electrodynamics in relativistic notation, tensors and magnetic resonance will be studied if time permits. Vector calculus will be developed and used extensively. Mathematics 107-108 is a prerequisite. Three lectures per week. *Three semester hours.*

P204.—Thermodynamics, Kinetic Theory and Statistics. Elective for students who are majors in physics or who have the mathematical prerequisites. The course will deal with the first and second laws of thermodynamics, entropy, phase changes and applications to physics and chemistry. Prerequisite is Mathematics 107-108. Four hours of lecture per week. *Four semester hours.*

P205.—Electromagnetic Theory. Required of all physics majors. Elective for those who have the prerequisite in Mathematics. Maxwell's equations will be developed in differential and integral form. The mathematics and physics of waves will be discussed and representative problems in physical

optics will be solved. Special topics and applications such as electrodynamics in relativistic notation, tensors and magnetic resonance will be studied if time permits. Vector calculus will be developed and used extensively. Mathematics 107-108 is a prerequisite. Three lectures per week. *Three semester hours.*

P301.—General College Physics I. This course is elective for Sophomores and Juniors who are desirous of having a course in physics without the rigor of mathematical treatment in P201-202. Selected topics from the areas of Mechanics and Heat will be discussed by means of lectures, demonstrations and laboratory work. Prerequisite is Mathematics 103-104. 3 lectures and 2 hours of laboratory work per week. *Three semester hours.*

P302.—General College Physics II. A continuation of P301, this course includes topics from the areas of Electricity, Light and Sound. P301 is a prerequisite. 3 lectures and 2 hours of laboratory work per week. *Three semester hours.*

P306.—Astronomy. Elective for students who are majors in Mathematics or the sciences. This course will be a descriptive treatment of the major features of the solar system and of the stars. Prerequisite: One semester of college mathematics. Three lectures per week. *Three semester hours.*

P401.—Modern Physics I. Recommended for all physics majors. Elective for those who have the prerequisite in Mathematics. Structure of the atom, atomic spectra, elementary particles, introduction to quantum theory will be studied. Mathematics 207-208 is a prerequisite. Three lectures per week. *Three semester hours.*

P402.—Modern Physics II. Recommended for all physics majors. Elective for those who have prerequisites in physics and mathematics. Structure of the nucleus, nature of radiations, relativity theory and isotopic applications will be studied. Physics 401 and Mathematics 207-208 are prerequisites. Three lectures per week. *Three semester hours.*

P403.—Electronics. Elective for students who are candidates for a major in Physics. Elective for students who have the prerequisites. Electron tubes and circuits, properties of pulse circuits and transistors will be studied. Prerequisites are Mathematics 301-302 and P304. Three lectures and 2 hours of laboratory per week.

P406.—History and Philosophy of Science. Elective for students who are majors in Natural Sciences, Physics, and Chemistry. The course treats of the history and philosophy of science and traces the development of scientific thought to the present time. Three hours per week. *Three semester hours.*

P407.—Advanced Lab. I. Recommended for all physics majors. Elective for those who have the prerequisites in physics and mathematics. A modern laboratory course designed to acquaint the student with the spirit and methods of experimental research in physics. The student will perform basic experiments in electronics, vacuum science, nuclear counting and magnetic field measurements. Prerequisite: P101-102. *Three semester hours.*

P408.—Advanced Lab. II. Recommended for all physics majors. Elective for those who have the prerequisites in physics and mathematics. In this semester, the student will be expected to do more advanced and sophisticated research in such fields as Mossbauer-effect measurements, microwaves, nuclear magnetic resonance and superconductivity. Six hours of laboratory per week. Prerequisites are P101-102; P201 may be taken concurrently. *Three semester hours.*

P409.—Theoretical Physics I. Required of all physics majors. Elective for those who have the prerequisite in Mathematics. The dynamics of particles, rigid bodies and elastic media will be examined by LaGrangian and Hamiltonian methods. Mathematical Physics is a prerequisite. Three lectures per week. *Three semester hours.*

P410.—Theoretical Physics II. In this part of the course Maxwell's equations and electromagnetic theory will be studied. Mathematical Physics and P403 are prerequisites. Three lectures per week. *Three semester hours.*

P490.—Honors Seminar. For physics majors who are candidates for honors. An individual research project will be developed under the guidance of a faculty member. Two hours per week. *Two semester hours.*

PS531.—Astronomy. Required of graduate students who are majoring in the teaching of science in the ~~junior-high~~ school. The subject matter of this course is descriptive astronomy with particular emphasis on the solar system. Lectures, demonstrations and laboratory exercises are given. Three class hours a week. *Three semester hours.*

PS532.—History and Philosophy of Science. Required of graduate students who are majoring in the teaching of science in the junior high school. This course deals with the history and philosophy of science with particular emphasis on the significance of experimentation in the development of scientific thought. Four hours per week, third quarter. *Two semester hours.*

POLITICAL SCIENCE

Dr. Lauréat J. Bernard, Chairman

A major in political science is opened to all interested candidates for the A.B. or B.S. degrees. A major is required to complete the following before graduation: Gv101, Gv102, Gv201, Gv202, Gv301 and three other 3-hour courses in the field. All major programs should be planned in consultation with the Department Chairman.

A minor is available for all degree candidates. The minor must include the five required courses required of a major and one other 3-hour course in government.

Gv101.—American Government. Elective for Freshmen. An analysis of the structure and operation of the government of the United States. This

course includes a study of the Constitution; the functioning of the executive, legislative, and judicial branches; the role of political parties; and the significance of the democratic heritage. Three hours a week. *Three semester hours.*

Gv102.—Comparative Government. Elective for Freshmen (others admitted with special permission). A comparative study of the governments of Great Britain, Italy, France, Germany, and Soviet Russia. The structure and operation of each of these governments will be analyzed in the light of its historical background. Three hours a week. *Three semester hours.*

Gv201.—Political Theory I. Elective for Sophomores and Juniors. An analysis of the major political doctrines held by theorists from the time of Plato to the Age of Enlightenment. Emphasis will be placed on the development of political thought in the cultural context of the period. Particular attention given to Plato, Aristotle, the Stoics, Thomas Aquinas, and Machiavelli. Three hours a week. *Three semester hours.*

Gv202.—Political Theory II. Elective for Sophomores and Juniors. Prerequisite Political Theory I or a course in American Government. A continuation of Political Theory I. Continues the analysis of political thought from the era of the American Revolution to modern times. Special attention to be given to the political thinking of the Founding Fathers, and to the institutionalizing of political, liberal, and civil beliefs. Three hours a week. *Three semester hours.*

Gv301.—International Relations. Elective for Juniors and Seniors. An introduction to the elements of national power, and the principles of international affairs applied to events in Asia, Europe, and North America. The period after World War II will be given special attention. Three hours a week. *Three semester hours.*

Gv302.—Massachusetts Government. An elective for Juniors and Seniors. A study of the state constitution and of the executive, legislative and judicial departments as to history, organization, powers and services. Also a study of county, municipal and town governments in Massachusetts. *Three semester hours.*

Gv303.—American Constitutional Problems and Law. Prerequisite: a course in American Government. This course dwells upon constitutional problems arising from federalism and separation of powers. Special emphasis placed on the extension of federal power through decisions of the Supreme students. The Case Law approach to be employed. Recommended for pre-law students. Three hours a week. *Three semester hours.*

Gv304.—Political Parties, Public Opinion, and Propaganda. Prerequisite: Gv101. An elective for Juniors and Seniors. This course includes a study of the organization and influence of political parties on national politics, the pressure groups and means of channeling public opinion, and the effectiveness of propaganda in the political process, with particular stress on the Democratic state. Three hours a week. *Three semester hours.*

Gv305.—Introduction to Law. Elective for Juniors and Seniors. This course will analyze the organization and functions of administrative tribunals; administrative procedure; nature and contractual obligations, basic property law encompassing personal and real property; analysis of various criminal offenses and criminal procedure; principles of civil recovery from injury; general rules governing administration of estates and trusts; and organization of business enterprise. Three hours a week. *Three semester hours.*

Gv306.—Commercial Law. An elective for Juniors and Seniors. This course will involve a legal study of the elementary organization and functioning of business enterprises. Special attention to be given to contracts, sales, negotiable instruments, agency, partnerships, and corporations. Three hours a week. *Three semester hours.*

Gv307.—International Organization. Elective for Juniors and Seniors. A systematic study of past and present international organizations. To be taken up are the Hague Court, the League of Nations, the United Nations, NATO, SEATO, OAS, and general policy and peace-keeping groups evolving in Western Europe and the Afro-Asian Bloc. The United Nations will be given special treatment. Three hours a week. *Three semester hours.*

Gv308.—American Foreign Policy. Elective for Juniors and Seniors. Prerequisite: Gv101. This course is designed to give a comprehensive overview of American foreign policy since 1945. Also to be probed are the many different manners in which the United States articulates its foreign policy through employment of economic, diplomatic, military, and cultural means. Three hours a week. *Three semester hours.*

Gv309.—Communist Behavior in World Affairs. Elective for Juniors and Seniors. Prerequisite: Gv102. The foreign policies of Communist nations, principally the Soviet Union and Communist China, will be analyzed. The political and diplomatic relationships between Communist countries themselves and with non-Communist countries will be the principle object of study. Three hours a week. *Three semester hours.*

Gv310.—Urban Government. Elective for Juniors and Seniors. Prerequisite: Gv101. The systems of government used in our cities will be scrutinized, as well as the methods employed while instituting urban renewal, educational reforms, and municipal efficiency. Relations between cities and their suburbs will also be given consideration in depth. Three hours a week. *Three semester hours.*

Gv311.—The United States Congress. Elective for Sophomores, Juniors, and Seniors. Prerequisite: Gv101. This course will present an analysis of the processes and problems of Congress in action. To be covered: the mode of election, the seniority system, the committees, the rules and work-load. Differences between the House and Senate will be brought out. Three hours a week. *Three semester hours.*

Gv312.—The Presidency. Elective for Juniors and Seniors. Prerequisite: Gv101. Central in this course will be the changing character of the Presidency,

the tremendous powers held, the many roles to be played, the advisors necessary for decision making, the difficulties of achieving the consensus. Generous examples from recent presidencies will be employed. Three hours a week. *Three semester hours.*

Gv313.—Politics of Developing Countries. An elective for Juniors and Seniors. Prerequisite: Gv102. This course will deal with the political problems facing underdeveloped nations. Careful examination to be made of the role played by underdeveloped areas in regional and international affairs. Examples to be studied will come from Asia, Africa, the Near East, and Latin America. Three hours a week. *Three semester hours.*

Gv314.—Contemporary Theories of Politics. An elective for Juniors and Seniors. Prerequisite: Gv202. This course will introduce the student to Twentieth century political philosophy. A detailed analysis of Communism. Fascism, Nationalism, and the politics of mass society will form the core of the work undertaken. In addition, modern socialist and Democratic Theorists such as Dahl, Laki, Cole, and Tingsten will be studied. Three hours a week. *Three semester hours.*

Gv315.—Government and Politics in the Far East. An elective for Juniors and Seniors. Prerequisite: Gv102. A comparative study of the political institutions of Japan, China, Korea, and Southeast Asia. Special attention given to the relationships of each of these power-units holds *vis-à-vis* the United States. Three hours a week. *Three semester hours.*

Gv401.—Education for Citizenship. Elective for Sophomores, Juniors, and Seniors. A course designed to enable teachers to educate for democracy with a clearer, stronger purpose. The course will suggest teaching materials and methods, student activities, and administrative and supervisory procedures which are directed toward more adequate preparation of students for the duties of citizenship. Effective school and community practices for increasing observance of law, intergroup good will, and political interest and intelligence will be stressed. Three hours a week. *Three semester hours.*

Gv402.—Seminar in Public Policy. Elective for Juniors and Seniors. Admittance requires *permission from the Department Chairman*. Limited enrollment. This course will be opened to selected students in political science who have a superior record in government courses. Seminar work will include the writing of a thoroughly-researched report in some area of political import, such as educational policy, federal-state relationships, significance of policy-making techniques. Three hours a week. *Three semester hours.*

Gv490.—Seminar in Selected Topics. Required of all honors' candidates during the second semester of the Junior year. Opened to others with *permission of Department Chairman*. This course deals with the writing of history and methods of historical research. Three hours a week. *Three semester hours.*

PSYCHOLOGY

Dr. J. Edward Conners, Chairman

The department offers course work required for degrees in education, including educational psychology, educational measurement and the developmental psychology of the level at which the student is preparing to teach. The department also offers an elective program leading to a major or minor in Psychology. Py101 is a prerequisite for all advanced courses.

Py101.—Introduction to Psychology. Required of all Freshmen in the teacher preparation curricula, elective for others. The course covers the fundamentals of the scientific study of behavior. Emphasis is placed upon behavioral development and change — particularly upon motivation, emotion, perception, personal adjustment, and social relations. Three hours a week. *Three semester hours.*

Py102.—Educational Psychology. A study of psychological facts and principles fundamental to education, teaching, and personal relationships between teacher and pupil. Topics considered in relation to school situations are physical and mental growth, intelligence, motivation, learning, transfer of training and mental hygiene of teacher and pupil. Three hours a week. *Three semester hours.*

Py103.—General Experimental Psychology. An overview of the experimental analysis of behavior in the fields of learning, motivation, perception, and other general areas. Emphasis on the design, execution, and analysis of experiments on psychological problems. Two lectures, one 2-hr. lab. Required of all psychology majors. Prerequisite Py101 or consent. *Three semester hours.*

Py201.—Child Growth and Development. Required of Sophomores who plan to elect the elementary or Kindergarten-Primary Curriculum. The course attempts to acquaint the student with the psychological, physiological, emotional, intellectual, social, and language development of the child in the light of research reviewed. Emphasis is on preschool and elementary age children covering their normal development and various problems which may be evident in the early grades. Prerequisite: Py101. Two hours a week. *Two semester hours.*

Py231.—Adolescent Psychology. Required of Sophomores who plan to elect the Secondary Curriculum. This course is a study of the sequence of growth in the adolescent with emphasis on intellectual growth, physical growth, social growth, emotional growth, ego development, communication development. Two hours a week. *Two semester hours.*

Py301.—Social Psychology. Prerequisite: Py101. An introduction to the study of behavior of the individual in groups. The socialization process is viewed from the influence of institutions, cultural anthropology, and psychological theory. Three times a week. *Three semester hours.*

Py302.—Introduction to Statistics. This course covers correlations, tests of significance, graphs, and statistical designs. Three times a week. *Three semester hours.*

Py303.—Psychological Measurements. This course includes historical background of psychological testing. It also covers elementary statistical concepts, test standardization, the 1960 Stanford-Binet and Wechsler scales. Tests of Aptitude, Achievement, Personality, Attitudes, as well as Protective methods. Opportunity is given to demonstrate these tests at various age levels. Three times a week. *Three semester hours.*

Py304.—Psychology of Learning. The course will cover the various contemporary schools and systems of psychological thought in regard to the learning process. Three times a week. *Three semester hours.*

Py305.—Psychology of Creativity. A review of current research in the general area of creativity. Emphasis on experimental investigation and empirical findings. Topics include: creative personality, creativity and age, creative process, teaching for creativity, etc. Recommended for advanced psychology majors and education majors. Prerequisite Py101 or consent. *Three semester hours.*

Py401.—Theories of Personality. This course is designed to acquaint the advanced student with the major psychological theories explaining the structure and dynamics of the human personality. A comparative study of fundamental concepts of biological, familial, social and cultural determinants of personality is utilized in conjunction with practical exercises in the techniques of measurement of personality variables. Systematic readings in source materials are used to supplement statements of theory, including psychodynamic, personalistic, and trait approaches to understanding human behavior. Required of all candidates for the major in Psychology. Prerequisites: Py101 and six (6) hours of additional study in Psychology. Three hours per week. *Three semester hours.*

Py402.—Psychological Research Seminar. The student is given individual research projects with an end to publication. Lectures will cover design and format for presentation of data. Three times a week. *Three semester hours.*

Py403.—Abnormal Psychology. This course is concerned with the development of concepts and principles of unusual mental activity with special emphasis placed upon the relation of these principles and concepts to general, child and adult psychology. Discussion of abnormal phenomena will be approached through consideration of the normal. Symptoms and behavior of abnormal individuals are seen as exaggerated manifestations of normal functioning. Content will embrace the classification of mental diseases and the various methods of treatment by discussing the chemical and psychotherapeutic approaches to prevention and control of mental illness. Three hours a week. *Three semester hours.*

Py404.—Psychology of Exceptional Children. Psychology of children having superior or inferior intellectual ability, defective vision, hearing, and speech; various physical handicaps and brain damage. Three times a week. *Three semester hours.*

Py501.—Psychological Foundations of Education—Part I. This course covers the theoretical aspects of psychology for the classroom teacher. It includes a systematic analysis of the major schools of psychology and a study of the effects of heredity and environment. Reading in the following areas will be required: results of research on growth and development, theories of intelligence, concepts in measurement and evaluation, individual differences in capacity and achievement, and learning theory. Three hours a week, first semester. *Three semester hours.*

Py502.—Psychological Foundations of Education—Part II. This course is an advanced systematic exposition of various psychological principles related to teaching, with a special emphasis on the application of these principles to specific classroom situations. Readings will be required in the areas of emotional growth, mental health, motivation, discipline, dynamics of interpersonal relationships, social psychology, and adolescent psychology. Four hours a week, third quarter. *Two semester hours.*

Py522.—Educational Psychology. A required course in the Graduate School. This course will include a systematic analysis of the major schools of psychology. Readings will be required in the following areas: heredity and environment; results of research on growth and development, theories of intelligence, individual differences in capacity and achievement, learning, theory, emotional growth, needs and motivation, mental health, discipline, dynamics of interpersonal relationships and social psychology. Three hours a week, first semester. *Three semester hours.*

SOCIOLOGY AND ANTHROPOLOGY

Dr. Lauréat J. Bernard, Chairman

Sociology is offered as a major through the facilities of the History Department. Majors in the field of sociology must complete So201, So202, So203, and So402 before graduation. The remainder of the course should be chosen in consultation with the Department Chairman and his program assistants.

A minor in sociology is available for all degree candidates. The minor must include the four required courses: So201, So202, So203, and So402. *All* potential minors are invited to consult with the Department Chairman for the remainder of the hours needed for a minor.

So201.—Sociology. Elective for second semester Freshmen, Sophomores and Juniors. This course is a study of social relationship in a democracy. It deals with such topics as the following: (1) factors in the social life of man; (2) the role and growth of culture; (3) the geographical environment;

(4) group life; (5) crowds, publics, and social classes; (6) cooperation, competition, conflict, accommodation, and assimilation; (7) economic institutions; (8) interrelationship of institutions; (9) problems of social disorganization. Three hours a week. *Three semester hours.*

So202.—Social Theory. Elective for Sophomores, Juniors, and Seniors. Prerequisite: So201. A background course in historical and methodical sociology. Study of major sociologists with emphasis upon: Comte, Spencer, Marx, Durkheim, Pareto, Weber, Park, Mannheim. Particular stress upon the main concerns and major developments of Nineteenth and Twentieth Century sociological problems. Three hours a week. *Three semester hours.*

So203.—Social Stratification. An elective for Sophomores, Juniors, and Seniors. Prerequisite: So201. This course will deal with the general theoretical background to social stratification; various methodological approaches to the study of stratification in communities; and studies made of the stratification system of the United States. Three hours a week. *Three semester hours.*

So204.—Social Methodology. An elective for Sophomores, Juniors, and Seniors. Prerequisite: So201. An intense study of the logical and mathematical foundations of social research, the functions of research, data collection, and data processing. Three hours a week. *Three semester hours.*

So301.—Introduction to Anthropology. Elective for Sophomores, Juniors and Seniors. A comparative introduction to the scientific study of man, of races, and anthropological methods. Stress to be on cultural anthropology, recent findings in cultural and human evolution, major concepts of social anthropology utilizing data from contemporary primitive societies, and the problems of comparative value systems. Three hours a week. *Three semester hours.*

So302.—Criminology, Penology, and Juvenile Delinquency. Elective for Juniors and Seniors. Prerequisite: Principles of Sociology. This course will emphasize the social factors in delinquent and criminal behavior, crime statistics and social systems, courts and clinics, treatment techniques and prevention. Special attention to be given to how the school can assist in these areas. Three hours a week. *Three semester hours.*

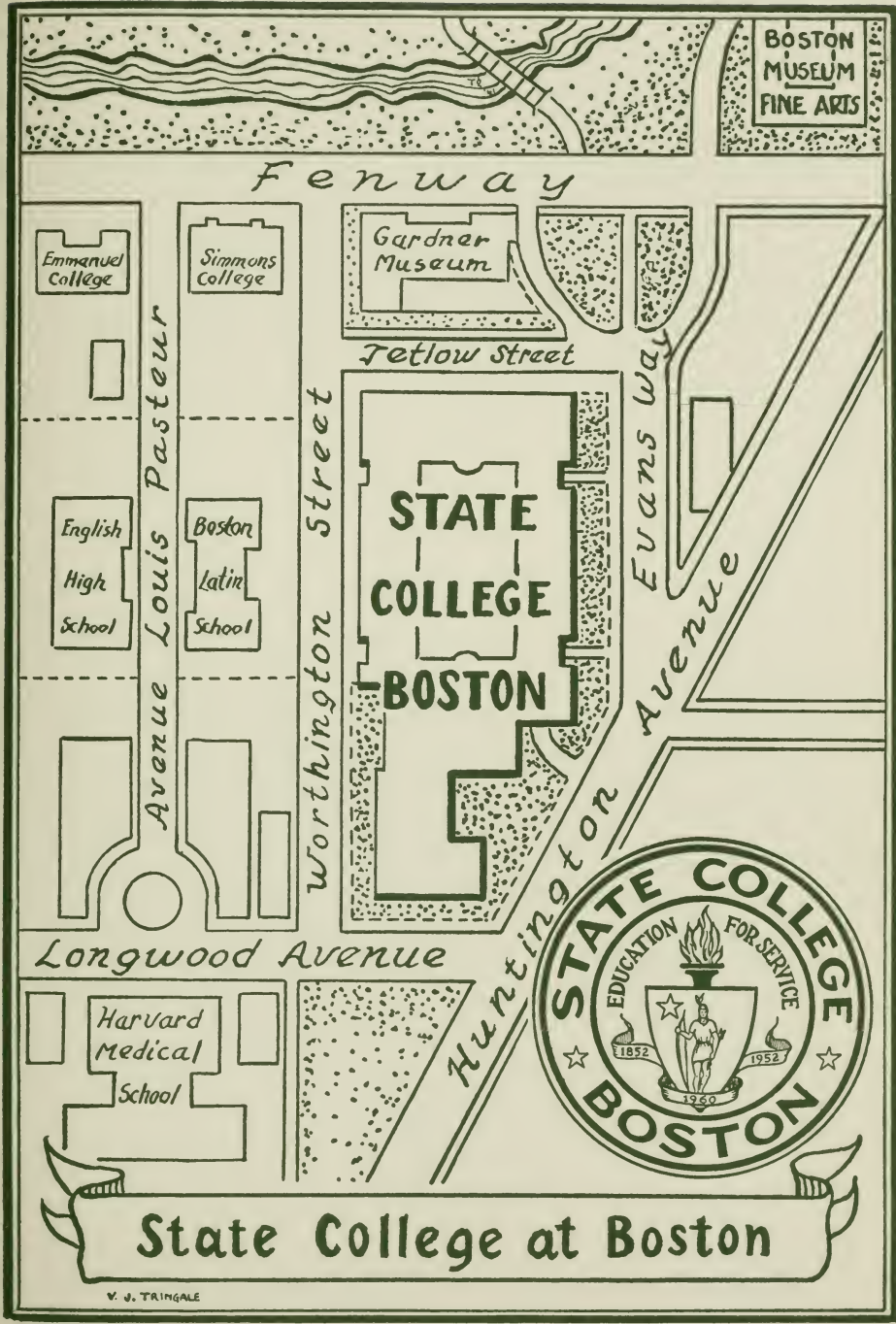
So303.—Minority Problems and Race Relations. Elective for Juniors and Seniors. Prerequisites: So201 and So301. A survey of the historical and contemporary problems of minority groups with stress upon American race relations, the sociological concomitants of social prejudice, the consequences of segregation and discrimination in America. A review of the development, methods, and objectives of Civil Rights groups and their connections to the Federal Government will be made. Three hours a week. *Three semester hours.*

So304.—Culture and Personality. An elective for Juniors and Seniors. A comparative study of the various cultural determinants, child rearing practices, and formation of adult characteristics. Emphasis upon the inter-relationship of language, ritual, myth, and adult values. Three hours a week. *Three semester hours.*

So305.—The Modern Family. An elective for Juniors and Seniors. Prerequisite: So201. A study of the nature, historical development, and contemporary trends related to the modern family. Special emphasis given to the factors involved in family adjustment and budgeting, parental responsibilities, and the effects of industrialization and urbanization on the American family. Three hours a week. *Three semester hours.*

So306.—The Community and Social Welfare. An elective for Junior and Seniors. Prerequisite: So201. An in-depth study of the structure, process, and objectives of social welfare programs. Stress given to housing problems, urban maladjustments, and the development and coordination of community welfare services. Three hours a week. *Three semester hours.*

So402.—Contemporary Social Problems. Elective for Sophomores, Juniors, and Seniors. Prerequisite: So201. Application of sociological principles to the analysis of major problems in contemporary society: problems caused by the decline of family influence, the mass media, crime and delinquency, the role of the government, the changing occupational structure, narcotics and gambling, and the pressures of organized society. Three hours a week. *Three semester hours.*



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College

Simmons
College

Gardner
Museum

Tetlow Street

English
High
School

Boston
Latin
School

Worthington Street

STATE
COLLEGE
BOSTON

Evans Way
Huntington Avenue

Longwood Avenue

Harvard
Medical
School



State College at Boston

V. J. TRINGALE

STATE COLLEGE AT BOSTON
625 HUNTINGTON AVENUE
BOSTON, MASSACHUSETTS 02115

